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SYMBOLS EMPLOYED

The following symbols have been used throughout this *Bulletin*:

.. = not available or not pertinent.
— = nil or negligible.
* = estimate by the secretariat of the Economic Commission for Europe.
* = revised figure.

In referring to combinations of years, the use of an oblique stroke—*e.g.*, 1955/56—signifies a 12-month period (say from 1 July 1955 to 30 June 1956). The use of a hyphen—*e.g.*, 1954-1956—signifies an average of the full period of calendar years covered (including the end years indicated).

Unless otherwise indicated, the standard unit of weight used throughout is the metric ton. The definition of "billion" used throughout is one thousand millions. Minor discrepancies in totals and percentages are due to rounding.

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ECONOMIC BULLETIN FOR EUROPE

Prepared by the

Research and Planning Division

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Vol. 9, No. 3 November 1957

UNITED NATIONS

CURRENT ECONOMIC DEVELOPMENTS IN EUROPE

1. The Course of Production in Western Europe

Western Europe's industrial production during the past few months has continued on the course of the first half-year — that of a slackening rate of growth; and the upward trend may in fact have been practically halted by the end of the summer, though at a high level of production.[1]

In the one country which shows a significant decline, Belgium, the lowering of industrial output was to a large extent due to strikes during July. Austria, Greece, Italy and Yugoslavia, on the other hand, have maintained a high rate of expansion during the year, associated with a high level of foreign trade, though in Austria the level of output has stabilized in recent months. In Greece, the installation of modern but highly capital-intensive capacity in the consumers' goods sector allowed an increase of industrial production. In Yugoslavia a marked increase in industrial production, as well as in exports, has followed the abandonment of deflationary policies in the second half of 1956.

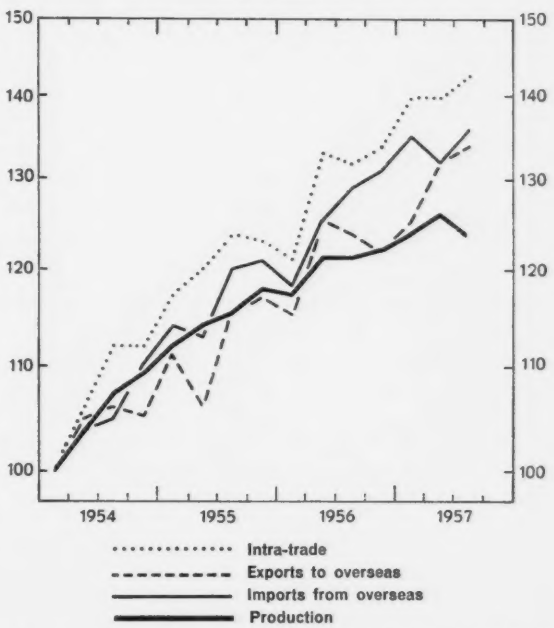
Among the countries in an intermediate position, the slower expansion in recent months in western Germany, where output had been rising most impressively, was at least partly due to a slackening of domestic demand.[2] The rate of increase of output achieved

CHART 1

Industrial production [a] and foreign trade [b] of western Europe

Volume indices, adjusted for seasonal variations, first quarter 1954 = 100

Semi-logarithmic scale



[a] Includes the following countries: Austria, Belgium, Denmark, Finland, France, western Germany, Italy, the Netherlands, Norway, Sweden and the United Kingdom. For the third quarter 1957 data refer to July-August only.

[b] Figures relate to trade of OEEC member countries.

such strong pressure to make full use of capacity as it was still exerting a year ago. The position is thus similar to that observed throughout the first half of this year in connexion with the decrease in weekly working hours: even though the impulse

[1] The actual downturn in the index of production for western Europe shown in Chart 1 may not be significant, since it is difficult to make adequate adjustment for seasonal factors affecting the indices for July and August, and no adjustment is made for longer holidays this year in France and western Germany.

[2] In view of the longer holiday season, it is quite likely that the low third quarter 1957 figures for western Germany are significantly affected by inadequate seasonal adjustments, and also by shorter working hours. An explanation of these shorter working hours and longer holidays, given in the *Monthly Report of the Deutsche Bundesbank*, September 1957, also takes into account the influence of home demand. " Although this slackening is primarily due to stronger holiday influences, the very fact that enterprises have granted works and individual holidays to so great an extent indicates that demand has not exerted

TABLE 1

Industrial output by sectors in western Europe

1953 = 100

Adjusted for seasonal fluctuations

Country	1955				1956				1957		
	I	II	III	IV	I	II	III	IV	I	II	III
Total industrial production											
Austria [b]	130	132	133	136	138	137	138	139	144	146	144 [a]
Belgium	113	114	115	120	120	125	122	122	127	126 [c]	115 [c]
Denmark	113	111	111	113	109	106 [c]	111	118	119	115	112
Finland	125	126	130	125	110 [c]	139	143	134	144	134	140 [a]
France	116	121	119	128	127	137	131 [d]	139	140	147	140 [d]
Western Germany	122	127	131	135	134	140	141	140	145	148	146 [d]
Italy	114	116	122	119	121	126	133	130	133	136	141 [a]
Netherlands	115	120	118	122	120	125	123	127	130	127	126
Norway	116	116	116	120	120	122	121	127	125	126	127
Sweden	109	111	110	113	112	113	113	119	118	120	118 *
United Kingdom	113	114	113	117	114	113	113	113	113	116	116 *
Yugoslavia [e]	120	132	132	148	124	142	151	171	151	168	166
Total of countries listed	116	119	120	123	122	126	126 [d]	127	130	132	130 [d]*
Metal-using industries											
Austria	148	152	161	164	160	158	155	152	143	163	159 [a]
Belgium	121	125	123	132	132	140	132	134	143	141 [c]	117 [a c]
Denmark	124	121	120	121	117	113 [c]	119	123	124	121	121
Finland	125	123	129	131	110 [c]	135	140	138	141	129	138 [a]
France	118	126	119	140	138	152	138 [d]	158	148	160	..
Western Germany	135	143	149	156	155	160	160	159	162	167	162 [d]
Italy	113	113	124	119	126	134	132	126	137	137	130 [a]
Netherlands	132	139	130	138	139	147	133	144	147	142	131
Norway	120	120	121	124	118	124	125	127	122	122	128
Sweden [f]	109	110	104	111	112	113	107	117	116	117	108 [a]
United Kingdom	120	120	120	125	120	116	115	116	117	118	..
Yugoslavia [e]	110	131	121	148	113	135	131	161	136	159	157
Total of countries listed	123	126	127	134	132	135	132 [d]	135	135	139	..
Textile industries											
Total of countries listed	106	106	106	107	108	113	112	112	118	120	116 *
Chemical industries											
Total of countries listed	124	129	129	131	130	137	141	143	144	147	..

Sources and methods : Data derived from national statistics have been experimentally adjusted for seasonal fluctuations by the secretariat. The adjusted series should at best be regarded as an indication of prevailing trends.

NOTE. — Total industrial production includes mining, manufacturing and public utilities, but excludes building and construction.

[a] Two months.

[b] Including U.S.I.A. firms.

[c] Figures affected by strikes.

[d] Not adjusted for effects of additional holidays granted for the first time in 1956 in France and in 1957 in western Germany.

[e] Unadjusted for seasonal fluctuations. The series for metal-using industries exclude electro-technical construction.

[f] Based on aggregate hours worked.

in Norway was fairly satisfactory; but, in both Denmark and Sweden, the pace of expansion of the first half of the year was not maintained. In Sweden, output was some 3 per cent lower in the third quarter than in the corresponding period of 1956, and in Denmark only 1 per cent higher, reflecting the halt to the recovery of consumer demand. Finally, the United Kingdom, after a long period of virtual stagnation, witnessed a revival of industrial production in the summer months which, however, reached its peak in June. This revival none the less raised the level of manufacturing output in the period May-August to 4 per cent above that of the same period of 1956.

The Producers' Goods Industries

The slower rate of growth of output has been more apparent in the basic industries than in other sectors of industrial production, though special factors have

causing that decrease came from collective agreements, it produced the effect that it did only because enterprises no longer have order backlogs so large as a year before and were not obliged to make good the loss of working hours paid at standard rates by increases in overtime carrying payment at higher rates."

played some part in this slackening, particularly in the case of coal. Coal production in the countries of the European Coal and Steel Community is unlikely this year to exceed the 1956 level. Output in western Germany has been affected by shorter working hours; and in the United Kingdom, where production had been running at about 2 per cent above the 1956 level during the first half of the year, this rate has not been maintained of late, owing to greater absenteeism now that penalties have been abolished. After a mild winter, and resumption of normal oil supplies, western Europe's coal stocks were exceptionally high in the summer, owing to some extent to the slower growth of industrial production. Except in the United Kingdom, there have also been somewhat higher imports of coal from the United States, which at the present level of trans-Atlantic freight rates can be sold at a landed price competitive with European pithead prices. Supplies from this source are likely to continue at their present high level, at least during the next quarter, even if freight rates should turn more than seasonally upwards, since much of the trade has been contracted under long-term shipping charters.

Steel output has continued to rise, but there are signs of a levelling off of demand. In the United Kingdom, the increase in domestic and export demand in the second and third quarters has been met from improved supplies resulting from an enlarged capacity. Domestic supplies of scrap have also proved adequate, whereas in the countries of the Community increased production from new capacity has been dependent on a high level of scrap imports from the United States. It is worthy of note that steel, in western Europe as in the United States, has not escaped the upward pressure on prices in the producing countries. In France, following a slight rise in August, prices were again raised at the beginning of November, by an average of 6½ per cent; British steel prices were raised some 7½ per cent in July; pressure on steel prices is also growing in western Germany since the rise in the price of coal.

On the other hand, there are reports that, buttressed by high stocks following heavy buying in the last year, and confronted with the possibility of a slower rise in demand for steel in the forthcoming year, steelmakers are holding out for lower f.o.b. ore prices. As a result, the flow of iron ore from all the main sources of supply is rather low for the season, and this has contributed to the depressed state of the freight market.

Output in the metal-using industries has also slackened, though there have been great differences both within sectors and between countries. In the engineering field Belgium and, to a lesser extent, western Germany seem (on the basis of seasonally adjusted indices) to be the countries which have experienced the greatest decline, only partially because of lower home demand. Shipbuilding and motor vehicles, on the other hand, have registered major increases in output in almost all countries.

The Shipbuilding Industry

Continually growing order books of shipbuilders, together with a steady rise in freight rates, have been a feature of 1957, as of other years, until some months ago. Deliveries of ships, and the volume of work under construction, continue at peak levels in most cases, and, thanks to subsidies, the high-cost Italian shipyards have also benefited from the rising world demand.

With the depressed level of freight rates prevailing since early spring, many older ships — including some of those released a year ago by the United States Maritime Commission — have been laid up ; but the influence of the freight market on new orders and the order stock cannot yet be clearly seen. It is premature to judge whether the present situation forebodes a more serious falling off of orders to shipyards than has so far occurred; but, in any event, there is sufficient work on hand to occupy the yards in the immediate future, and order books provide work for two to three years ahead unless there are massive cancellations.

Output and Exports of Motor Vehicles

The production of motor vehicles, and especially of passenger cars, has so far been one of the main elements of expansion in the major producing countries of western Europe. In the United Kingdom, where the motor industry was hit by the Suez crisis as well as by the preceding deflationary policies and export difficulties, output has gradually been recovering, and reached record levels in September. The recovery of exports has been particularly impressive, and this year they will probably exceed the high level reached in 1955. The relaxation of import restrictions in Australia since May has helped; but the greatest achievement overseas has been in the American market, where the United Kingdom was, by the autumn, once again the largest exporter. However, as can be seen from Table 2, all producing countries (including the smaller ones such as Sweden, which are not shown) have shared in the increase in exports to this destination.

It is nevertheless worthy of note that the home market has also absorbed a fair share of the increase in western European output, including that of the United Kingdom. Expenditure on motoring in that country has been rising since the second quarter, and hire-purchase credit extended for the sale of new cars is well above the 1956 level, in spite of the restrictions

TABLE 2

Production and exports of passenger cars

Country	Production	Exports			
		Total	To the United States	To Europe	To other countries
	January to June 1956 (thousands)				
France	340	79	1.2 [a]	12.9 [a]	14.6 [a]
Western Germany	432	212	30	135	47
Italy	149	41	—	27	14
United Kingdom	413	181	15	50	116
Total of four countries	1 334	513 [b]	..	..	..
	January-June 1957 (Index numbers: January-June 1956 = 100)				
France	108	137	555 [c]	115 [c]	121 [c]
Western Germany	108	113	165	100	119
Italy	104	127	875	115	121
United Kingdom	94	113	284	102	96
Total of four countries	103	118 [b]	..	..	..

Source: National statistics.
[a] Billion francs.
[b] Including a small amount of trade amongst the four countries.
[c] Based on value.

in force for the last two years.[3] In France, on the other hand, manufacturers have responded to the request to expand exports, and deliveries to the home market are at about the same level as in 1956; but heavy taxation of petrol may have been a factor restraining home demand.

Changes in Employment

The slower rate of growth of output does not appear as yet to have had any significant effect on the level of employment, though among the countries where deflationary policies have been in effect for some time a slight lessening of the tightness in the labour market is discernible. Nevertheless, in the Netherlands unfilled vacancies, though fewer than a year ago, were still in August three times as great as the number of unemployed; and in Sweden, though demand and supply in the labour market have moved nearer to balance this year, vacancies are still five times the number of unemployed. In the United Kingdom, during the revival in industrial production in the summer, the number of unemployed fell below that of vacancies; but more recently these two indicators have been drawing together again. In Belgium, the decline in industrial production has not so far been reflected in data on global unemployment, partly because firms are holding on to labour and have reduced their working hours.

Pressure on the labour supply continued high in Switzerland, but owing to an even greater flow of immigrant labour than last year, industrial employment in the second quarter was 5 per cent greater than a year earlier. In France, where the demand for labour continued buoyant, and the number of vacancies was higher than in 1956, the shortage of manpower was partly compensated by a further lengthening of the working week. In Italy there was some decline in the large numbers of unemployed, as a result of a higher level of industrial output; and in western Germany also there was some reduction in unemployment, to 1.9 per cent in September 1957 as against 2.2 per cent in September 1956.

The Movement of Prices and Wages

During the third quarter the rise in wholesale prices in western Europe tended in general to level off, and in some cases prices even fell, with France and Finland as the marked exceptions. Slower stock accumulation and improved supplies through higher industrial production and larger imports are most probably the major factors behind the recent stabilization. The recent increase in the price of coal in western Germany is not likely to have a significant impact on the average price level.

Retail prices have risen less than last year — by no more than 2 per cent since the beginning of the year in nearly all countries. The most important exceptions are France, Finland, the Netherlands and Ireland. In the last two countries, however, the major part of the increase was due to specific policy measures. In Ireland, it was almost exclusively the consequence of the abolition last May of subsidies on butter and on bread — a measure which has been justified by the necessity of restoring equilibrium in the state budget: in the Netherlands, a large part of the increase was due to higher rents, public utility charges and net indirect taxes. In France, on the other hand, government intervention has played only a minor role in the considerable rise in retail prices in recent months, which has approached an annual rate of no less than 15 per cent. The reduction of subsidies in this case accounts for only part of the increase, and the main cause of the rise in prices has to be sought rather in demand pressures.

[3] The following figures are illustrative:

New Hire-purchase Credit extended by Finance Houses direct to Hirers per calendar month (new private cars)
(December 1955 = 100)

	January	*February*	*March*	*April*	*May*	*June*	*July*	*August*
1956	117	102	107	115	115	106	101	64
1957	96	119	151	156	194	159	184	113

Source: Board of Trade Journal, 18 October 1957.

TABLE 3

Index numbers of the cost of living in western European countries

1953 = 100

Country	1956			1957		
	January	April	September	January	April	September
Austria	107	108	106	113	108	111
Belgium	102	103	104	106	106	108
Denmark	112	113	114 [a]	116	114	115 [a]
Finland	101	105	110	117	117	122
France	102	103	103	103	102	107
Western Germany	104	105	105	106	106	107
Greece	125	127	126	127	128	130
Ireland [b]	106	108	108	108	110	114
Italy	108	111	112	113	111	113
Netherlands	106	107	110	109	109	118
Norway	105	108	110	110	113	112
Portugal	104	105	103	106	105	106 [c]
Spain	108	111	111 [c]	119	120	124 [c]
Sweden	107	108	109	113	113	114
Switzerland	102	102	104	104	104	106
United Kingdom	109	113	112	114	114	116
Yugoslavia	113	117	113 [c]	121	116	115 [c]

Sources : National statistics.

[a] October.

[b] February, May and August.

[c] August.

It is difficult to evaluate the effects of wage increases on price movements. Hourly earnings in industry increased, to a greater or lesser degree, in almost all the western European countries during the first half of 1957 — the main exceptions being Finland, Ireland and Spain. The scanty information on wage changes in the third quarter available at the time of writing suggests that the summer has been uneventful in the majority of western European countries. The critical period in many instances will be this winter, when important negotiations on wages are due in France, western Germany, the United Kingdom and, to a lesser extent, Belgium. In the metal-making industries of western Germany, the trade unions have asked for an increase of 10 per cent in wages, with a reduction of the standard working week from 45 to 44 hours; other negotiations are due in December and substantial wage demands are expected.

Generally, and irrespective of the more general policies followed, it would seem that during the period January-September of this year, industrial wage increases have not outpaced the growth of product per man-hour in the majority of western European countries, the main exception being perhaps Belgium. It is particularly difficult to judge the course of productivity in manufacturing in the United Kingdom, which in the early months of the year was affected by some " hoarding " of labour following the Suez crisis. With the revival in production, however, it is probable that productivity in manufacturing has been rising, though in the service and basic industries, and especially in coal mining, productivity increases have been negligible. In western Germany, industrial wages increased by about 3 per cent during the first half of this year, while production per man-hour is reported to have increased by as much as 6 per cent. In Italy, too, industrial wage increases lagged behind the estimated average growth of product per man-hour, while in a number of other countries, including France, Switzerland, Austria and the Netherlands, wages and productivity seem to have risen at about the same pace.

2. CHANGES IN WESTERN EUROPEAN TRADE

Record levels were reached in intra-European trade in the third quarter of 1957; and the level of trade with overseas also continued extremely high, in spite of the softening of raw material prices to which further reference is made below.

As can be seen from Table 4, the data for western Europe's balance of payments with the United States in the second quarter show a considerable improvement, which in part reflects the ending of extraordinary European import demands arising from the Suez crisis. Nevertheless, the balance of goods and services on civilian account was less satisfactory than in the second quarter of 1956, mainly owing to the continuous high imports of oil, coal and cotton during the quarter, which were not offset by the very marked increase in exports, particularly of motor-cars and machinery.

These developments of over-all western European trade conceal striking differences between countries. The rate of increase of imports generally bore some relation to the increase in industrial production; and Italy, Austria, France and Greece, where production increased significantly, were among the countries with the greatest rise in imports. With few important exceptions, however, imports in almost all western European countries rose considerably in value in the first three quarters of 1957 over those of the same months of 1956.

Half the countries of western Europe showed a rise of exports exceeding 10 per cent, and in general these were the countries with a high rate of expansion of output. The smaller countries in this group — with the exception of Ireland, whose exports of meat and

TABLE 4

Balance of payments of western Europe with the United States

Millions of current dollars

	1956	1957	
	Second quarter	First quarter	Second quarter
Imports from the United States	−1 325	−1 745	−1 535
Exports to the United States	+715	+753	+784
Services (net), excluding United States military expenditure [a]	+189	+22	+161
Balance of goods and services on civilian account	−421	−970	−590
United States military expenditure in western Europe	+527	+512	+517
Balance, including United States military expenditure	+106	−458	−73
United States Government grants and credits	+203	+173	+200
Movements of private United States capital	+120	+168	+203
Net increase (−) or decrease (+) in long-term dollar assets	−190	−203	−164
Net increase (−) or decrease (+) in short-term dollar balances and gold	+39	+315	−189
Errors, omissions and inter-regional transfers of dollars	−278	+5	+23

Sources: Survey of Current Business, United States Department of Commerce, rearranged from the issue of September 1957.

[a] Including private remittances and United States Government pensions.

livestock were particularly successful — are all exporters of industrial products. Austria has benefited from expansion in western Germany and Italy, which together account for some 40 per cent of its exports;[4] Swiss exports of machinery and watches continued to be in strong demand, though textile exports were at the same level as in 1956.

Belgian exports rose by barely 1 per cent in value, mainly owing to the decline in exports of metal products to which reference has already been made. The value of Danish exports rose slightly, in spite of unfavourable prices in export markets. The French economic difficulties, and their consequent impact on France's trading position, have already been referred to in the August *Bulletin*, and the situation has not changed significantly since then, apart from an extension of the *de facto* exchange rate adjustment by the application of the special import taxes to all basic products.

Strains on the Sterling Area

The decline in the gold and dollar reserves of the United Kingdom by more than half a billion dollars in the two months of August and September was due to a number of factors. Of the ordinary commercial factors, the continued drain by India (which is likely to accelerate with the reduction in the statutory cover for the currency), and the customary seasonal payments for wheat and tobacco, are perhaps the most important. Furthermore, the foreign exchange position of other countries of the sterling area, such as New Zealand and South Africa, deteriorated during the quarter. These developments followed a favourable first half of the year, during which sterling countries other than the United Kingdom actually made a greater net contribution to the central gold and dollar reserves than in the same period of 1956.[5] The United Kingdom's own balance of payments — well before the new measures were introduced — had turned out to be better than was officially expected last November, when a small deficit on current account was forecast.

There can be little doubt, particularly in view also of the August inflow of funds into western Germany, that there was a strong element of speculation in the loss of the British reserves during the third quarter. It is also clear that the recent recovery of sterling, though due essentially to a return flow of some of the speculative money,[6] is also a reflection of an improvement

[4] Austrian exports to western Germany in the first half of 1957 were 22 per cent higher than in the corresponding period of 1956; exports to Italy were 27 per cent higher.

[5] This was so in spite of the heavy drawings by India, which in part were compensated by a £72 million credit from the IMF.

[6] $243 million were in fact added to the reserves in October. Drawings on the credit of the U.S. Export-Import Bank accounted for $250 million, but of the outflow of gold and dollars, $133 million related to the European Payments Union's settlement for September, whereas the EPU surplus for October yielded a gain of $19 million. If EPU payments are related to the month in which the liability was incurred, and extraordinary capital flows such as the $250 million credit are ignored, the net inflow to the reserves during October must have been at least $140 million, in contrast with a corresponding outflow during August and September of something like $750 million.

The gains in October were matched by a reduction of the western German EPU surplus from $237 million in September to $26 million in October.

TABLE 5

Indicators of changes in the trade and payments position of western European countries in 1957

Country	Increase (+) or decrease (−) in trade balance [a] over preceding quarter *Million dollars*			Gold and foreign exchange holdings of treasuries and central banks	
	1957			Change during the third quarter *Million dollars*	Holdings at end of third quarter expressed as number of months' imports at the 1956 rate
	First quarter	Second quarter	Third quarter		
Austria	−18.6	+31.3	−7.2	+66	6.2
Belgium-Luxembourg	+47.9	−2.2	−67.2	−22	3.9
Denmark	−30.4	+55.8	+12.6	+16	1.5
Finland	−60.5	+61.5	+56.5	+19	2.1
France	−109.0	−29.4	+120.0	..	0.9 *
Western Germany	−51.2	+112.4	−18.0	+871	10.4
Greece	−0.9	−70.4	..	−19	4.9
Iceland	+13.7	−12.1	+5.6 *	−1 [b]	1.8 [b]
Ireland	−7.1	+3.2	+19.2	+18	6.0
Italy	−53.7	−4.2	+115.3 *	+50 [c]	3.0
Netherlands	−83.6	+16.6	+92.6	−97	5.1 [c]
Norway	−12.1	−25.6	+51.9	+2	1.8
Portugal	−19.0	−15.5	+27.3	+6 [b]	18.6 [b]
Spain	−40.4	+8.1 [d]	..	−1 [b]	1.1 [b]
Sweden	−69.6	+81.4	+38.6	−14	2.5
Switzerland	−50.1	+12.0	+23.1	+63	13.0
Turkey	−0.1	−3.5	..	+19	9.2
United Kingdom	−228.1	+49.6	−29.1	−531 [e]	2.0 [e]

Sources: *General Statistics*, OEEC; *International Financial Statistics*, IMF, and national statistics.

[a] Exports f.o.b. minus imports c.i.f.

[b] Change during July and August or holdings in August.

[c] Change in second quarter or holdings in June.

[d] Figures refer to April-May at quarterly rate.

[e] Gold and U.S. and Canadian dollars only.

in the United Kingdom's own balance of payments following the resumption of normal oil revenues, lower freight rates [7] and an improvement in the terms of trade.[8] But the benefit to the United Kingdom's balance of payments from the improvement in the terms of trade, in so far as it is due to lower prices for imported commodities, will later be at least partly offset by the consequential fall in the purchasing power of overseas primary producers including those in the rest of the sterling area.

If the $250 million that are still to be drawn from the Export-Import Bank are included, the United Kingdom's reserves stood at $2,340 million at the end of October, or slightly above the level in October 1955; but between these two periods debt obligations amounting to just over one billion dollars were incurred. It is apparent, therefore, that in spite of a further stand-by credit from the IMF of $379 million (available until December 1957) the balance of payments of the United Kingdom is likely to remain sensitive to speculative movements.

It is, moreover, essential for the United Kingdom to achieve a larger current surplus on the balance of payments in order to meet the demands for new capital from the rest of the sterling area and to finance the exports paid for through a reduction of the sterling balances.[9]

In spite of the policy of restricting internal demand followed since early 1955, the rise in the volume of British exports has been slowing down. While in the period 1954-1956 exports rose in volume at an annual rate of 5 to 6 per cent (after adjustment for the dock strikes) the increase in the first three quarters of 1957 (over the same period of the previous year) has been only about 3½ per cent.[10] While

[7] The United Kingdom is a net importer of tramp shipping.

[8] The terms of trade improved by 7 per cent between May and September.

[9] It has been unofficially estimated that in the period 1946 to 1955 70 per cent of the external long-term capital invested in the sterling Commonwealth came from the United Kingdom and (including special assistance to colonial territories) averaged in the period 1953-1956 some £170 million a year. (See *The United Kingdom's Role in Commonwealth Development*, Cmnd. 237.)

[10] Thus, the tendency, already observable in 1956 for the United Kingdom's share of world trade in manufactures to decline continued, as shown below:

Share of the United Kingdom in World Exports of Manufactures

(Percentages)

1954	*1955*	*1956*	*1957* (Jan.-June)
20.4	19.7	19.0	18.3

Source: *Board of Trade Journal*, 1 November 1957.

boom conditions prevailed, British exports depended to a large extent on the ability of British manufacturers to quote early delivery dates: with the gradual transition to a buyer's market, the main factor is likely to be the ability to quote competitive prices, and with the present trends in wages in the United Kingdom this can be achieved only through higher rates of productivity. On either count, therefore, a considerable investment effort is required.[11] A policy of expansion would involve in the first instance a re-allocation of resources, from consumption to investment — to prevent the repercussions on imports of a significant rise in over-all demand — so long as the exchange reserves are so vulnerable and so long as the contractive tendencies in world trade are not offset by policies of expansion in other countries.

The Persistent Creditor Position of Western Germany

The foreign exchange reserves of western Germany (excluding those held by the credit institutions) increased by 17 per cent during the third quarter, to a level more than $1,600 million higher than one year ago. The trade surplus during the quarter amounted to $270 million, representing 13 per cent of the value of exports in the period. The balance on invisible account was $210 million, or one-quarter above the rate in the same period of 1956.

The very rapid accumulation of reserves was due partly to a speculative inflow of capital. There was a very marked tendency for payments due in Deutschemarks to be quickly settled, in anticipation of a possible appreciation of the mark, and for bank deposits held by non-residents to rise considerably. None the less, the normal surpluses on current and capital account still represented one-third of the total increase in reserves. The very existence of these surpluses must have been an important factor in the speculative movements.

Main components of the gold and foreign exchange accruals at the Deutsche Bundesbank

Millions of DM; months or monthly averages

	1957				
	1st qtr.	2nd qtr.	July	Aug.	Sept.
Total	276	486	858	1 459	1 104
of which :					
Surpluses on current and capital account	173	255	314	559	338
Changes in terms of payment [a]	131	235	275	451	664
Foreign exchange equivalent of foreigners' DM deposits accruing at credit institutions [b]	−28	−4	269	449	102

Source : Monthly Report of the Deutsche Bundesbank, October 1957.

[a] Including errors and omissions.

[b] Net of changes in foreign exchange holdings by the credit institutions themselves.

The western German contribution towards restoring equilibrium in western Europe's payments relationships has been made mainly in the commercial and financial field, but has not as yet had any far-reaching effect. A reduction by one-quarter of import duties on a wide range of manufactures was announced in the summer, and its continuation in 1958 awaits final approval. The Central Bank discount rate was lowered from 4½ to 4 per cent on the same day as the bank rate was raised in Great Britain, and was apparently designed to check the influx of foreign funds. By itself, however, this could hardly have exerted a major influence over short-term speculative flows of capital, since the gains anticipated from speculation far outweighed the losses that could result from such small changes in the short-term rate of interest. Furthermore, long-term rates in western Germany are still fairly high.

[11] The ability to deliver machinery in times of boom, which is determined by earlier rates of investment, is of course also a function of the investment demands of the home market.

3. The International Setting

It has been seen that the level of trade of western Europe with overseas countries continued high throughout 1957. As the year advanced, however, two features of the international setting gave rise to apprehension: the weaknesses in commodity markets, the repercussions of which on western European trade were beginning to be felt, and the start of a recession — which has so far been mild — in the United States.

Weaknesses in Commodity Markets

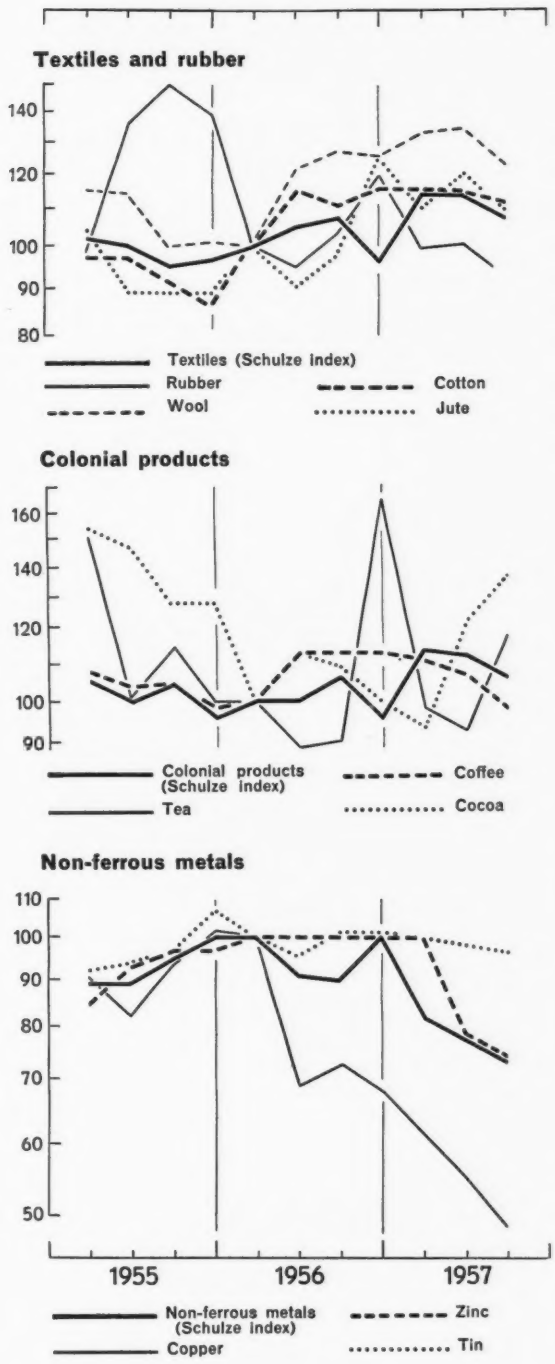
Prices of nearly all major commodities entering into international trade — with the exception of fuels, iron and steel — have been declining in recent months, although the pattern is by no means uniform. As can be seen from Chart 2, over a somewhat longer period it is only the prices of rubber and most non-ferrous metals which have fallen to any important extent.[12] As a result of their decreased purchasing power, the imports of the principal producers of non-ferrous

[12] Prices of some commodities have been influenced by market interventions. Thus, cocoa prices have been sustained by a minimum price scheme in Brazil, and tin is at present being kept at its support price by purchases on behalf of the International Tin Council.

CHART 2

Index numbers of world prices of selected commodities

End of quarter (end of 1st quarter 1956 = 100)
Semi-logarithmic scale



Sources: Indices computed by Mr. R. Schulze, Bonn; *The Journal of Commerce*, New York; *The Financial Times*, London.

metals (see Chart 3) fell sharply in the second quarter. On the other hand, the imports of overseas agricultural producers as a whole have continued to rise, though any substantial further softening of the prices of such commodities as rubber and coffee [13] could well have strong repercussions on the imports of these countries as well.

It seems likely that some fundamental changes in supply underlie the present weakness of commodity markets. Production of raw materials and food has made considerable strides since, and partly because of, the boom following the Korean war.[14] While the increase in agricultural output has already had a marked effect on prices of those commodities which have not enjoyed the advantages of price-support schemes, the increases in the output of non-ferrous metals have, with few exceptions, made their impact more recently. It should not, therefore, be altogether surprising that a combination of greatly increased supplies and slacker demand should have brought about some serious price falls.

So far as price tendencies in the immediate future are concerned, the apparently low level of consumers' stocks of non-ferrous metals suggests that a relatively small revival in consumption could, *ceteris paribus*, entail a fairly marked recovery in prices. Similarly, this low level of stocks is also likely to mitigate the impact of any further contraction of trade.

The Outlook in the United States

In recent months, the downward movement of most sensitive indicators of United States business activity has become more pronounced. The Federal Reserve Board was more concerned, during the third quarter of the year, with the fight against price inflation than with directly stimulating economic activity, and justified the continuation of its restrictive credit policy at the time by reference to the steady rise in the cost of living.[15] In the same vein the Administration also indicated that, although it would resolutely take measures against a major downturn, it would find useful some relaxation of the pressures

[13] The minimum prices and quotas for exports of coffee decided in October by the Latin American producers will, however, provide some support for the coffee market.

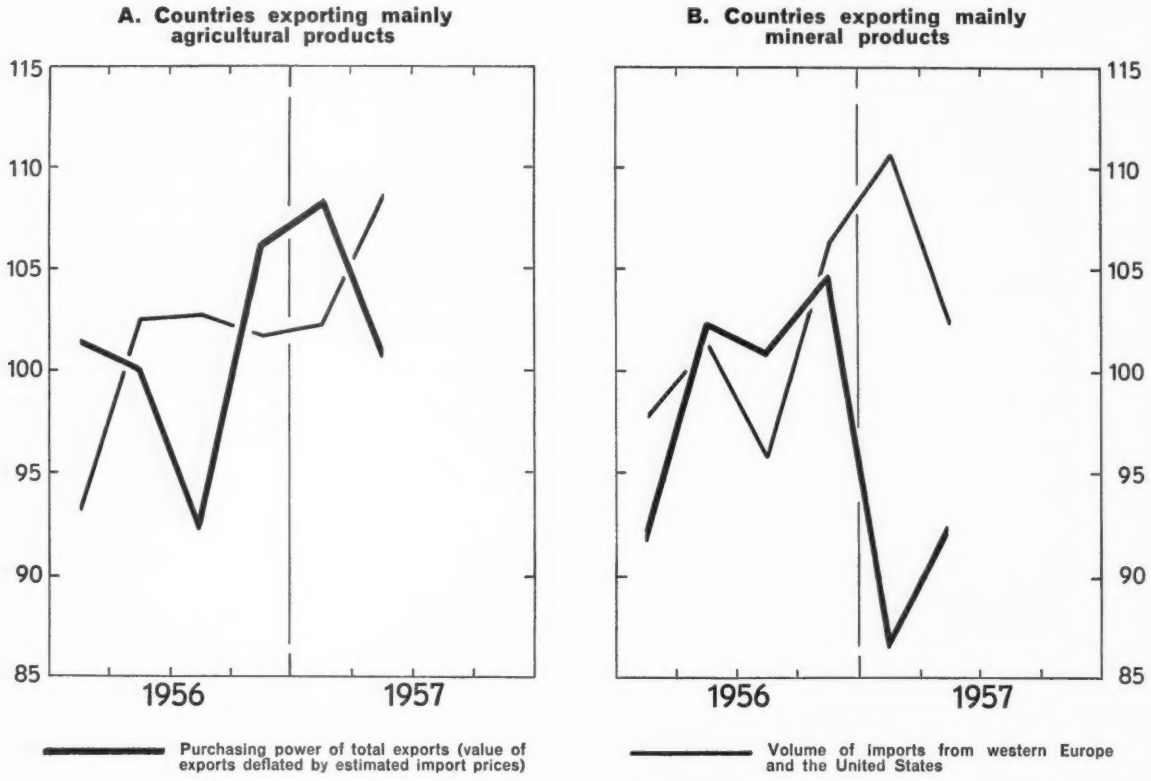
[14] World output of copper, for instance, increased by 44 per cent between 1949 and the first half of 1957, and that of zinc by 48 per cent. Among agricultural commodities, output of natural rubber and cotton was in 1955 already 28 and 19 per cent respectively above the level of 1949, but decreased thereafter, while world wool production was 15 per cent higher in 1956.

[15] As in most western European countries, the increase was mainly due to food and services, while prices of industrial products, such as apparel and house furnishings, have hardly risen at all.

CHART 3

Purchasing power of exports of non-dollar overseas countries

Index numbers, 1956 = 100



For sources and methods and grouping countries, see *Economic Survey of Europe in 1956*, Appendix B, page 16.

on the economy.[16] Some changes are now reported in monetary policy, including lower discount rates.

Not all major elements of business activity behaved adversely during the quarter. Consumer expenditure registered a further increase and, seasonal factors taken into account, was of the order of 2 per cent above that of the second quarter; but it was still concentrated on non-durable goods and services, whereas sales of durable goods — pending the reception of new car models — remained constant. For the month of October, however, some further softening in the retail sector has been reported. Furthermore, about one-half of the increase in expenditure was probably absorbed by higher prices.

Another sustaining factor so far has been housing construction, which experienced a major decline in 1956 and which has recently risen, partly because of easier financing. Finally, personal disposable income rose by 1 per cent above the second quarter's level and was 5.5 per cent higher than in the corresponding quarter of the preceding year;[17] but there was a slight decline from August to September and again in October, owing to a fall in wages and salaries not offset by increases in other incomes.

On the other hand, manufacturing employment in September 1957 was 1 per cent below the level of the preceding year. Investment in new plant and equipment in the manufacturing sector has been tapering off throughout 1957;[18] and the level of

[16] Addressing the semi-annual meeting of the Business Advisory Council, which foresaw business activity dropping slowly from the present level until some time in 1958, the Secretary of Commerce stated that "this readjustment, levelling off and pause for breath is a healthy thing for the economy".

[17] In real terms, personal disposable income remained about constant, and was only some 1.5 per cent higher than in the corresponding quarter of last year.

[18] Actual expenditure on new plant and equipment, in the first half, and estimated expenditure of business in the third and fourth quarters of 1957, was as follows (billions of dollars at annual rates, seasonally adjusted):

		First quarter	Second quarter	Third quarter	Fourth quarter
Manufacturing:	1956	13.5	14.7	15.8	16.1
	1957	16.1	16.3	16.2	16.2
Total:	1956	32.8	34.5	35.9	36.5
	1957	36.9	37.0	37.2	37.2

Source: Survey of Current Business, September 1957.

production dropped, soon after the beginning of the year, to slightly below the peak reached in the fourth quarter of 1956. Thereafter the seasonally adjusted level of production was stable until September, but fell by 1½ per cent in October to the lowest point reached since the strikes in the steel industry in July 1956.

Nevertheless, stock accumulation has continued, though at a much reduced rate, and the aggregate of manufacturers' order books is shrinking. Early in the autumn a further pointer towards a recession was given by the *Survey* of the McGraw Hill Department of Economics, according to which United States business plans to reduce its capital expenditure in 1958 by 7 per cent as compared with 1957; if these forecasts were realized, this would bring the level of such expenditure down to that reached in 1956, though it would still be 20 per cent above that of 1955.

Prospects

The salient feature of the third quarter has been the coincidence of an accentuated decline in the rate of growth of output in western Europe with increasingly acute foreign exchange difficulties in countries with low levels of reserves, the mild beginning of a recession in the United States and weaknesses in commodity markets.

The current situation differs greatly from that prevailing during the United States recession of 1953-1954. At that time, adequate reserves provided a cushion against the effects of the decline in United States activity on exports from primary producing countries, and hence prevented the start of interdependent and cumulative downward spirals. The less favourable distribution of reserves existing today is not offset by the volume of readily available international credit, so that deficit countries are more vulnerable to speculative movements of capital; and the persistent weak foreign exchange position of a number of economically important countries appears to have damped the drive for economic expansion.

In statistical terms, the tightness of the international payments situation has been somewhat relieved by recent capital outflows from the United States, but the comfort that can be derived from the second quarter figures in this context is relatively small, since it is only because of the payment of $300 million for Venezuelan oil exploration rights that there was a net outflow of $70 million. The liquid resources of the International Monetary Fund have been reduced by one-third over the last year; and the strains on the EPU mechanism have been only slightly reduced by the agreement of western Germany to an unlimited *rallonge* of its quota up to 30 June 1958. Meanwhile, the emergency measures taken in the United Kingdom in September, as well as the official declarations at the annual meeting of the International Monetary Fund that there would be no alteration in exchange parities, have put an end to speculation and led to a return flow of some of the speculative money.

In fact, while the need to protect foreign exchange reserves is unquestionable, the contribution which a continuation of such restrictive credit policies can make to the solution of the basic balance-of-payments problems of such countries as the United Kingdom is open to some doubt. It has already been stressed that a long-term approach to the United Kingdom's payments problems would involve a continued high rate of investment. However, the September measures, which stipulate a stabilization of public investment expenditure in the next two years at the 1957 level (implying that the volume may even contract), the limitation of bank advances to the private sector to the average level of the preceding twelve months, stricter control of capital issues and a rise in the bank rate from 5 to 7 per cent seem to point to a stagnation (if not to a decline) of investment, including productive industrial investment.

As previously indicated, the recent balance-of-payments troubles of the United Kingdom have not been to any important extent brought about by new developments internal to the United Kingdom, where until the recent brief revival the rate of expansion had considerably slowed down since 1955.[19] Moreover, there are signs that investment in manufacturing might have levelled off even without the September measures.[20] The rise in the bank rate was clearly designed as an immediate method of counteracting currency speculation but, together with the other measures of credit policy, it seems likely to depress the state of business. The contribution of these measures to relieving inflation which has its origin in rising wages depends to a large extent on the sensitivity of trade unions to changes in the level of activity; some wage claims lodged since these measures were announced have, in fact, included a provision for protection

[19] The increase in activity in the summer months was mostly due to consumption, which had been virtually stable during 1955 and 1956. Personal consumption in the second quarter of 1957 was 3 per cent greater in volume than in the same quarter of 1956; for the first quarter the increase was 1 per cent. However, the rise in retail sales in August and September was accounted for almost exclusively by higher prices.

[20] Total private investment (excluding dwellings) rose 6 per cent in volume, and public investment 3 per cent during the first half of 1957, but, as has been pointed out above, investment demand is declining. An official inquiry conducted in May suggests that private investment in manufacturing in 1957 may be about 7 per cent greater in volume than in 1956, following increases of 18 and 14 per cent in 1955 and 1956 respectively. Provisional plans revealed by the same survey suggest that there will probably be no rise in private investment in manufacturing in 1958 (cf. *Board of Trade Journal*, 20 September, 1957). The home market order book for machine tools has declined continuously since the middle of 1956, and now stands almost 20 per cent below the figure then reached.

against a possible lowering of earnings through shorter working hours.

The international economic situation would of course be considerably improved by a resumption of expansion in the United States, where the lowering of the discount rate, and the probable increase in planned expenditure as a result of higher outlays on defence should provide some stimulus. Within Europe, some of the smaller countries such as Italy, Austria, Greece, Switzerland and Yugoslavia, may well continue at more or less their present rate of expansion, but France is in the midst of serious difficulties and, because of its balance-of-payments troubles, will probably continue to maintain tight import controls for some time.

Of all western European countries, western Germany has the greatest immediate possibilities of providing the necessary stimulus to economic growth in western Europe as a whole. It continues to enjoy the advantages both of ample foreign exchange reserves and, by comparison with countries which have enjoyed full employment throughout most of the post-war period, of adequate availabilities of manpower. These labour supplies could be supplemented even in the relatively short term from manpower drawn from the large labour surplus in southern Europe. A renewal of expansion, accompanied by increased imports, could have considerable favourable effects at the present time both on western Europe and on the less developed overseas countries — which would, of course, benefit still more if increased capital exports were possible.

4. Current Trends in Eastern Europe and the Soviet Union

The 1957 Harvests

So far as concerns one key sector — agriculture — in the economy of eastern Europe and the Soviet Union, the latest reports confirm the impression, noted in the last issue of this *Bulletin*, of average or good harvests of the principal crops in all countries except Czechoslovakia[21] and possibly the Soviet Union. Such quantitative estimates as are available are shown in Table 6.

The salient features of the 1957 grain crop in the Soviet Union are an excellent harvest in the Ukraine and poor yields in the virgin lands and the Volga zone. The Ukrainian crop may well be as good as in the bumper year 1955, and thus be in the neighbourhood of 30 million tons.[22] Drought in Kazakhstan — where the virgin lands campaign had raised the grain area from 7 million to over 23 million hectares since 1953 — turning to rain at harvest time has possibly reduced the yield there as low as the 1955 level (which would imply a crop of about 10 million tons[23]). In the R.S.F.S.R., which provides over half the crop, yields range from very good in the North Caucasus through moderate in Siberia to drought-ridden by the Volga. The small producers — Byelorussia and Moldavia — appear to have had a notably good year. As a whole, the Soviet crop is likely to exceed the 1955 level (108 million tons), but to fall short of the 1956 record (130 million tons).

For the eastern European countries as a group, the grain harvest promises to be at least 6 million tons better than last year's, and the good crops in Rumania, Bulgaria, Hungary and Poland are of particular importance to those countries.

In Hungary and Poland, the need to import cereals this year has been an important factor contributing to the strain on their balances of payments; and in Bulgaria, as elsewhere, a good grain harvest is a welcome complement to the efforts being made to expand livestock production. In Rumania, where the expectation of post-war record crops of both wheat and maize is now confirmed,[24] the rise in the area under maize from 2.9 million ha in 1953 to 3.7 million ha in 1957 (with the bread grain area rising only from 3.0 to 3.1 million ha) has also been a reflection of the policy of improving fodder supplies and livestock production. Moreover, this particularly good harvest will permit the introduction of the new wages system, planned to be implemented in Rumania this year, which appears to have been postponed — apart from experiments in some selected enterprises — until it should be clear whether or not food supplies would rise sufficiently to match the consequent increase in consumers' incomes.

It is reported that in Albania a good harvest and rising output of animal food products have permitted the abolition of all food rationing from 1 November. The Government has raised food prices somewhat above the level of the old ration prices but has reduced prices of certain industrial consumers' goods, has

[21] The Minister of Agriculture has recently stated that output plans for grains of all kinds, industrial crops and fodder may be under-fulfilled in Czechoslovakia this year, partly as a result of harvesting difficulties. (*Rudé Právo*, 10 October 1957).

[22] The 1955 crop was estimated at 32 million tons (SURVEY for 1956, p. B-5) and the 1956 crop given as 22 million tons (*Pravda Ukrainy*, 14 March 1957). State procurements (excluding maize) in 1957 were 47 per cent larger than in 1956 (*Pravda*, 28 September 1957). The proportionate increment of output will not be so great since in years of poor harvest few non-compulsory sales are made to the State.

[23] By 20 September 1957 only 258 million *puds* had been procured by the State, compared with 1,340 million *puds* during last year as a whole. There have been no subsequent detailed reports from Kazakhstan, and Mr. Khrushchev in a speech to the Supreme Soviet on 6 November said that drought had made the crop a poor one.

[24] The "record" crop of 12 million tons of grain registered in 1955 has recently been revised to a figure of 9.9 million tons.

TABLE 6

Sown area and production of certain crops in eastern Europe

	Area (thousand hectares)			Production (thousand tons)		
	1955	1956	1957	1955	1956	1957
Bulgaria						
Wheat	1 368	1 375	1 450	1 921	1 717	2 317
Rye, including meslin	167	144	..	173	133	145
Barley	289	259	..	471	343	463
Oats	160	151	..	161	135	181
Maize	742	791	800 *	1 477	1 056	1 373
Cotton	132	96	90	61	40	C
Grapes	121	123	80	513	399	A
Czechoslovakia						
Wheat	721	722	742	1 473	1 541	C
Rye, including meslin	513	515	519	968	1 050	C
Barley	642	668	670	1 291	1 408	C
Oats and mixed grain	526	539	535	974	1 034	C
Maize for grain	161	183	169	391	399	C
Sugar beet	216	222	227	6 152	4 585	6 100 *
Potatoes	621	630	629	7 905	9 635	B
Hops	8.8	8.9	8.0	6.1	4.9	B
Grapes	18.9	22.8	22.0	71.8	34.1	B
Total fodder plants on arable land	1 201	1 187	1 168	5 693	5 297	C
Permanent grass	1 093	1 110	1 099	3 980	3 969	C
Eastern Germany [a]						
Wheat	400	380	.. [b]	1 211	1 086	1 259
Rye	1 074	1 110	.. [b]	2 337	2 299	2 231
Barley	336	322	.. [b]	924	834	897
Oats	535	448	.. [b]	1 362	1 112	999
Sugar beet	215	201	223	5 712	4 324	..
Potatoes	843	783	..	11 194	13 565	..
Hungary						
Wheat	1 358	1 388	1 246	2 130	1 845	1 914
Rye	447	440	421	544	494	452
Barley	403	407	481	790	644	945
Oats	121	117	171	176	176	277
Maize for grain	1 291	1 162	1 345	2 912	2 033	2 870 *
Sugar beet	113	116	84	2 241	1 948	1 660 *
Potatoes	230	220	240	2 470	2 055	2 210 *
Sunflower seed	164	149	75	187	152	83 *
Hemp	34	33	22	123	115	91 *
Rumania						
Wheat	2 948	2 894	3 122	3 006	2 436	4 000 *
Rye	202	172		214	136	
Maize for grain	3 265	3 571	3 700	5 877	3 932	6 300 *
Sugar beet	145	139	131	2 000	1 519	1 900 *
Sunflower seed	300	294	286	277	223	A
Grapes	213	222	225	1 110	578	1 000 *
Poland	*Yield — quintals per hectare*					
Wheat — winter	14.9	14.9	16.2	2 134	2 121	12 470
— spring		13.5	13.8			
Rye	14.1	13.1	14.4	7 003	6 558	
Barley — winter	15.1	13.3	15.8	1 239	1 131	
— spring		14.7	15.5			
Oats	13.9	14.4	14.3	2 287	2 259	

Sources : Statistical yearbooks, daily press, and direct communications from the governments.

NOTE. — Estimates of 1957 harvests are generally those made towards the end of October. Where quantitative estimates are not available, qualitative appraisals are indicated as follows: A — above average; B — about average; C — below average.

[a] Production data refer to net (barn) yields, officially computed since 1953 and different from gross (biological) yields published earlier and reproduced in some previous *Bulletins* and SURVEYS.

[b] Total area under grain increased by 25,000 hectares or 1 per cent.

granted tax-free pay increases to those workers and pensioners holding ration cards (pro rata to their previous ration entitlement) and has introduced a comprehensive family allowance scheme.[25] The net effect of these changes, together with some rise in wages and other incomes, is estimated as equivalent to a rise of 4 per cent in real living standards.

As had earlier seemed likely, Poland and Rumania appear to be the two countries with the most generally favourable harvest results. Except in Hungary crops of sugar beet are apparently good; and, except possibly in the Soviet Union potato crops are also average or good. But in both the Soviet Union and Czechoslovakia the main reason why expectations are not more favourable seems to be harvesting difficulties rather than low biological yields.

Rumania's biggest sugar plant, near Craiova, came into production in September with a capacity of about 30,000 tons a year; and it is hoped that no sugar imports will be necessary in future. Self-sufficiency in sugar supplies has, however, been attained only with a considerable drop in yields, since before the war — though a marked improvement is expected this year — and with an even more striking disproportion between the growth of sugar beet production (over 300 per cent) and the rise in sugar production (just over 100 per cent.) The main explanation probably lies in the extension of cultivation to unsuitable land, lack of fertilizers and delays in harvesting, followed by losses during transport and storage in the processing plants and possibly by some use of sugar beet as fodder. A discrepancy between the rates of growth of output of sugar beet and of sugar can also be observed, though to a lesser extent, in eastern Germany, where an indication of harvesting losses is available.

	1934-38	*1955*	*1956*	*1957*
Rumania				
Sugar beet:				
Area (thousand ha) . .	26	145	139	131
Yield (q/ha)	154	138	109	145
Production (thousand tons)	393	2 000	1 519	1 900
Sugar production (thousand tons)	70 *	130	151	..
Eastern Germany				
Sugar beet				
Area (thousand ha) . .	186	215	201	220 [a]
Biological yield (q/ha) .	..	286	243	..
Net yield (q/ha)	294	266	216	270 [a]
Net harvest (thousand tons)	5 467	5 712	4 324	6 000 [a]
Sugar production (thousand tons)	ca 750	641	506	750 [a]

Sources: *Anuarul Statistic R.P.R.*, 1957; *Scinteia*, 25 September 1957. *Anuarul Statistical Romăniei*, 1939; *Statistisches Jahrbuch der D.D.R., Neues Deutschland*, 9 February and 20 October 1957, and data supplied by the east German authorities.

[a] Plan.

[25] Family allowances were hitherto paid to large families under various special conditions; they are now payable to all wage earners in the state sector beginning with the second child.

Livestock Numbers

As was noted in the last issue of this *Bulletin*, sales off farms of animal products generally rose in the early months of this year. Later reports suggest that similar trends have continued, though in Czechoslovakia output of milk is lagging seriously behind the plan, largely as a result of inadequate fodder supplies and of a fall in the number of cows which had already started last year. Beef deliveries have been maintained by heavy slaughterings.[26]

Such indications as exist of changes in livestock numbers are shown in Table 7. The general fall in numbers in Hungary reflects last winter's fodder shortage; but there seems to have been a tendency for cattle numbers to stabilize or fall somewhat in all the countries shown, other than the Soviet Union, and no very noticeably expansionary tendencies are apparent except for pigs in Poland.[27] The temporary stabilization of cattle numbers, and of other livestock numbers, would not necessarily be a disadvantage —

[26] *Rudé Právo*, 10 October 1957.

[27] However, reductions by 15 per cent in retail prices of pork and lard in the Soviet Union this autumn suggest that supplies of these products have substantially improved.

TABLE 7

Livestock numbers in eastern Europe

Millions

Country	Total cattle	of which cows	Pigs	Sheep
Bulgaria:				
January 1956 . .	1.60	0.58	1.41	7.83
January 1957 . .	1.53	0.56	1.47	7.60
Czechoslovakia:				
July 1956	4.17	2.10	5.15	1.28
July 1957	4.16	2.09	5.33	1.23
Eastern Germany:				
June 1956 . . .	3.74	2.12	8.06	2.02
June 1957 . . .	3.77	2.11	7.86	2.09
Hungary:				
March 1956 . .	2.17	0.89 [a]	6.06	1.93
March 1957 . .	1.97	0.89 [a]	5.00	1.87
Poland:				
June 1956 . . .	8.35	5.60	11.56	4.22
June 1957 . . .	8.21	5.82	12.26	4.01
Soviet Union: [b]				
July 1956	36.40	12.30	25.60	105.70 [c]
October 1956 . .	36.18	13.26	34.11	98.43 [c]
July 1957	39.30	13.00	31.00	111.00 [c]
October 1957 . .	..	..	..	103.60 [c]

Sources: Plan fulfilment reports, statistical yearbooks, and statistical bulletins. For the Soviet Union: *Narodnoe Khozyaistvo SSSR v 1956 godu*, pp. 129-130; *Pravda*, 20 July and 27 October 1957.

NOTE. — For comparison, see *Economic Bulletin for Europe*, Vol. 9, No. 1, Table 20, p. 37.

[a] Without cows in first calf.

[b] Collective and state farms only; the July counts may exclude animals owned by subsidiary farms of state enterprises (not classified as state farms).

[c] Including goats.

as has been pointed out in the past [28] since better feeding of the existing stock could in most countries still produce significant improvements both in slaughter weights and in milk yields.

The change in the balance of the livestock population in Poland and Hungary is to some extent attributable to changes in prices paid to farmers this year for animals for slaughter. In both countries there has been an increase in cattle prices in relation to pig prices — straightforward in Hungary, but in Poland tending particularly to favour the filling of obligatory deliveries of meat by sales of calves while reserving pigs for delivery on contractual terms. This must have partially accounted for the fact that the whole reduction in the cattle population in Poland during the past year has been concentrated on calves.[29]

Industrial Production

Fairly comprehensive indicators of the general trend of economic development outside the agricultural sector since the middle of this year are available only in eastern Germany, Hungary, Poland and, to a considerably lesser degree, Czechoslovakia.

In these four countries, and in Bulgaria and the Soviet Union, gross industrial output in the first eight months of the year was above the levels planned. In Czechoslovakia there still seems to have been little if any further slackening of the rate of growth of over-all output since last year, and in Poland the annual rate of expansion so far this year has been about 8 per cent, as compared with 10 per cent in 1956. In eastern Germany the 7½ per cent rise in gross output during the first eight months, as compared with the same period of last year, somewhat exceeds the annual rate of growth (6 per cent) registered in 1956, but there have recently been signs of some slowing down.[30] In Bulgaria the rate of expansion fell slightly in the first nine months of this year, though gross output was 15 per cent above the corresponding 1956 level. In the Soviet Union output continued to rise at last year's annual rate of about 11 per cent.

In both Czechoslovakia and eastern Germany, however, the relatively high rates of growth of over-all output which have so far been maintained conceal continuing failures to produce the assortment and quality of goods required and to reduce production costs according to plan. The familiar reports of failure to meet export contracts continue in eastern Germany, where the annual plan for export deliveries was fulfilled only to the extent of 44 per cent in the first 8 months of this year. In Czechoslovakia equally familiar complaints persist — of failures to deliver machines and equipment of required type and quality, both to domestic users and for export, and of shortfalls in planned supplies of rolled steel and other foundry products.

In both these countries, scarcity of fuel and electric power continues to be the principal restraint on the rate of growth of industrial output. A shortfall of 2 million tons on expected deliveries of coal from Poland combined with losses of home production, due in part to heavy absenteeism [31] and recruitment difficulties, have restricted power supplies in Czechoslovakia, despite some success in increasing the utilization of low-grade fuels. In eastern Germany, brown-coal output, which was up to plan levels in the early part of the year, appears now to be over a million tons behind schedule, following a shortfall of some 2 million tons on the third quarter's output. Moreover, only 50 per cent of the year's plan for new electricity capacities was fulfilled by the end of September, and generating capacity out of use for repairs was 15 per cent greater than planned.[32]

In Poland, while shortages of electric power and, to a lesser extent, imported raw materials remain the main hindrance to the growth of total output, the pattern of production has in some respects been adjusted in the desired direction. Coal output continues to improve, and there has also been a noticeably more rapid rise in output of consumers' goods (by 10 per cent) than of investment goods (by 7½ per cent) in the first eight months of this year as compared with the same months of 1956. The engineering sector alone increased deliveries of consumers' goods to the home market by 53 per cent from last year's very low level.

Transport

There are indications that strains on the transport system in some countries may once again hinder economic expansion during the period of peak traffic in the later months of the year. In eastern Germany, the need to load on the railways one million more tons of coal than originally planned had already, in the second quarter of this year, brought about serious delays in transport of building materials.[33]

[28] *Economic Bulletin for Europe*, Vol. 8, No. 3, Section 5.

[29] However, it is also possible that some of the reduction may be apparent rather than real, since in past years peasants had an incentive to declare, at the census, more calves than they possessed, as this lessened their obligatory deliveries of milk.

[30] Two series of index numbers of gross output in eastern Germany, which diverge for reasons as yet not fully explained, show the following trends this year (percentage of same period of 1956):

	First quarter	*Second quarter*	*July/ August*	*January/ August*
Plan fulfilment series	110	106	105.5	107.4
Statistische Praxis series	107.5	104.3	..	..

[31] In Ostrava, 25 per cent of workers are reported to have been absent daily from the pits in July, 27 per cent in August and 22 per cent in September (*Hospodářské Noviny*, No. 26, 1957).

[32] *Neues Deutschland*, 20 October 1957.

[33] In 1955 about 46 per cent of the total tonnage loaded was coal and 13 per cent building materials.

TABLE 8

Average turn-round time of railway wagons

Days

Country	1954	1955	1956	1957
Czechoslovakia	4.57	4.25	4.35	4.49 [a]
Eastern Germany	3.3	3.5	3.55 [b]	3.47 [c]
Hungary	4.5	4.0	4.6	4.6 [c]
Poland	5.21	5.02	5.16	5.04 [c]
Rumania	4.8	4.3	4.4	..
Soviet Union	6.7	6.2	6.3	[d]

Sources : Annual Bulletin of Transport Statistics for Europe, seventh year, 1956, Table 21, p. 48; and national statistical yearbooks.

[a] August 1957. Planned average turn-round time of railway wagons in Czechoslovakia is 3.98 days.

[b] Plan was 3.40 days.

[c] First half 1957.

[d] Plan for the first six months was not fulfilled.

Moreover, difficulties which occurred last year in rail traffic with the Soviet Union are likely to be accentuated this autumn by the intervening rise in trade, and loading goods at the Polish frontier may be especially difficult.[34]

Similar troubles are anticipated in Czechoslovakia where shortage of wagons was reported in July to be already holding up transport of coal.[35] Underloading of wagons and damage to rolling-stock through careless handling seem to be among the causes of difficulty, while there has also been a failure to improve turn-round times to any significant extent (see Table 8). Any significant improvement must depend, above all, on increasing the speed of trains, which in turn depends upon better coal supplies.[36]

The recent Polish-Czechoslovak Economic Co-operation Agreement (see Section 5, below) envisages the formation of a standing joint transport commission which will encourage co-operation in this field. Increased transport of Czechoslovak foreign trade through Polish harbours is expected to raise this traffic to 24 per cent above the 1956 level by 1958; and an increase in transport of Polish trade through Czechoslovak territory, particularly along the Danube, has also been discussed.

Wage and Price Trends, and Currency Reform in Eastern Germany

The increased output of industrial consumers' goods in Poland, which has been mentioned above, has not prevented strains on supplies and prices of these goods in the domestic market, and these pressures seem unlikely to be significantly eased for some time to come.[37]

In eastern Germany, it seems that similar strains to those experienced in Poland have developed, following the rapid abandonment of the campaign launched in 1954 for the production of household goods and other durable consumers' goods by firms not specializing in these lines. Production of some of these goods has actually fallen since then, and hidden price increases — taking effect through quality changes, re-branding, specific shortages, etc. — have partly offset the formal price reductions that have been put into effect.

It now appears that, some time in 1958, a fairly substantial rise in the general consumer price level will occur in eastern Germany as a consequence of the ending of rationing, which is to be achieved by raising the prices of goods now rationed, and which will coincide with a reform of the wage system.[38] Differences between time and piece rates will be reduced and piece rates abandoned where it is impossible to establish reasonably objective criteria for norms; norms will be adjusted so as to improve the position of people doing heavy physical work in the basic industries, and the lowest wages will be raised, especially in the basic sectors. At the same time, higher family allowances will offset the effects on real incomes of the disappearance of rations for children, and taxation of the private sector will be increased. The net effect of these measures, apart from changing the relative attractiveness of employment between sectors, is likely to improve the lot of the lowest-paid workers and of those in basic industries at the expense of some managerial and professional categories and of the private sector.

Seen against the background of these plans, the currency reform of 13 October would seem to have had two major aims — first, the obvious one of eliminating the cash holdings (either inside or outside eastern Germany) which finance smuggling between eastern and western Germany; secondly, to give the east German authorities an idea of the size of cash hoards overhanging the domestic market for consumers' goods and, incidentally, to achieve the cancellation of those hoards which their holders did not dare to declare.[39]

It seems that DM 600 million of the DM 5543 million of banknotes outstanding were not exchanged

[34] See *Aussenhandel*, No. 10, 1957, p. 350.

[35] In July there was a lack of 10,000 wagons (*Rudé Právo*, 9 September 1957).

[36] The figures shown in Table 8 compare favourably with average turn-round times in nearly all western European countries, but methods of calculation may not be identical (see *Economic Survey of Europe in 1956*, Chapter V, Section 3 and Table 17).

[37] The current economic situation in Poland is discussed elsewhere in this *Bulletin* (see "The Polish Economy since 1950", Section 5).

[38] See *Neues Deutschland*, 20 October 1957.

[39] A note on the recent rapid increase in note circulation and in savings deposits in eastern Germany was included in the last issue of this *Bulletin*, pp. 30 and 31.

or deposited on 13 October. It is impossible to know how much of this DM 600 million was physically outside eastern Germany at the time and how much represents domestic holdings not declared — for fear of inquiries or for some other reason. Press reports suggest that, in fact, large sums could fairly easily be declared without provoking inquiries, though there was some pressure for them to be converted into savings deposits rather than exchanged for new cash. Subsequently police controls have been reinforced to prevent exports of the new currency to western Germany and west Berlin.

The Situation in Hungary

The economy of Hungary shows fewer outward signs of strain twelve months after the uprising than could have been expected in the spring of this year. The harvest has been better than had been hoped for, as a result of favourable weather and of changes in land tenure and agricultural marketing which had a good effect on the peasants' efforts; and the pace of industrial recovery has also exceeded earlier expectations. Gross industrial output in the third quarter was practically restored to the level of twelve months earlier, and a rough calculation suggests that the volume of net output (net at least of the additional import content of gross output) may have been no more than 5 per cent below that of the third quarter of 1956, and may have attained this level by September.

A successful state purchase campaign together with large imports has enabled grain stocks to be built up to a level that should assure a carry-over of about 3½ months' consumption (instead of the little more than 2½ months' initially expected) at the end of the year; but it will then still be necessary to acquire from peasants or to import the equivalent of 2½ months' consumption of grain before deliveries from the 1958 harvest are available. Coal output has also exceeded the plan, and in September was running at 92 per cent of the corresponding 1956 rate, despite the abolition of the extraordinary Sunday shifts. This recovery plus large imports has enabled coal stocks to be built up by 1 September to a level higher than for many years past and has, in addition, made it possible to avoid the usual autumn transport crisis.[40]

Fixed investment, though in value terms 20 per cent less in the first half of this year than in the same months of 1956, seems also to be running ahead of plan, but with a somewhat disturbing growth in the proportion of uncompleted projects and a tendency for shortfalls on planned investment in equipment and over-fulfilment of construction plans.[41]

TABLE 9

Imports of some fuels, raw materials and grain by Hungary

Thousand tons

	1955	1956	1957
	Half-yearly rate		March-August
Coal	396	408	1 302
Iron ore	678	558	756
Fine-section steel	10.0	6.0	11.3
Rubber	5.4	5.4	6.8
Raw cotton	23.9	20.0	20.0
Washed wool and wool tops	2.17	1.73	2.16
Sawn softwood [a]	257	228	270
Mining timber [a]	280	296	335
Bread grain	122 [b]	38 [b]	192 [b]
Coarse grain	16 [b]	−50.4 [b]	223 [b]

Source : Statisztikai havi Közlemények, No. 8, 1957, pp. 32 and 38.

[a] Thousands of cubic metres.

[b] Net imports in March-August.

The trend of consumption in real terms is not easy to establish. The big increase in per capita money earnings in state industry occurred up to March, since when there has been little change. This implies some fall in real wages since March, consequent upon the retail price increases decreed in May and other rises in living costs through higher charges for tuition and entertainments, quality changes and other hidden price increases. However, farm incomes, and possibly wages in co-operative industry, may well have risen further. The total value of retail sales in the third quarter of this year was 14 per cent above the level of twelve months earlier, and the increase in real terms seems to have been of the order of 6 to 8 per cent.[42]

The stability and steady expansion of the Hungarian economy this year has, however, depended above all on the financing by credits of a balance-of-payments deficit that has added about 8 per cent to total disposable national income and has also provided for adequate supplies of just those products which, if scarce, constitute the most dangerous bottlenecks. The figures in Table 9 provide striking evidence of the rise in imports of such products, on which the recovery of the Hungarian economy has been based. In sum, it may be said that low home investment and large foreign disinvestment have been the price of the recovery so far. Looking farther ahead, difficult problems of investment financing, and of determining the future pattern of development within the international framework, still await a solution.

[40] *Népszabadság*, 1 October 1957.

[41] *Statisztikai havi Közlemények*, No. 7, 1957, and *Népszabadság*, 17 August 1957.

[42] The effect of the official price increases has been estimated at 2.8 billion forints on an estimated trade turnover of 37.8 billion forints from May to December 1957, which implies a price rise of 8 per cent. (See *Közgazdasági Szemle*, No. 10, 1957, p. 1010; *Statisztikai havi Közlemények*, No. 8, 1957, p. 40; *Népszabadság* and *Népakarat*, 27 September 1957.)

5. Long-term Planning and Co-operation in Eastern Europe and the Soviet Union

Recent months have seen increased activity in the field of co-ordination of the economic plans and policies of the eastern European countries and the Soviet Union. Since the June meeting of the Council for Mutual Economic Assistance in Warsaw, committees of the Council have been allotted permanent secretariats and now cover agriculture, timber and cellulose, coal, electric power, engineering, non-ferrous metals, chemicals, road transport, etc.[43] In sectors where this is appropriate the members will now prepare and discuss in the committees their development plans for some ten to fifteen years ahead. A " multilateral payments scheme " (with the State Bank of the U.S.S.R. as the clearing agent) is to come into operation next year, but it seems likely, in the early stages at least, to affect only a very small part of intra-member trade.

Such specific schemes of long-term co-operation as have recently been announced do not seem, however, to have been developed within the framework of the co-ordinating activities of the Council. Following the agreements on future export markets for Albanian and Bulgarian agricultural produce and the agreement on east German investment of 100 million roubles in the Polish brown-coal industry,[44] a new agreement has been announced providing for Czechoslovakia to supply on credit to Poland machines and installations required by the coal mining industry to a value of 250 million roubles up to 1965, the credit to be repaid in deliveries of hard coal. An interesting feature of this agreement is that it provides also for some " decentralization " of contacts between the two countries. Instead of all contacts being through the two Ministries of Foreign Trade, other ministries and scientific and technical institutions in the two countries have the right to conduct direct technical and economic co-operation.

A new long-term trade agreement has also been signed between the Soviet Union and eastern Germany, providing for credits of $75 million in foreign exchange and 400 million roubles in commodities from the Soviet Union and for a stable and expanding export market for eastern Germany up to 1960 — with the counterpart of a steady flow of imports of materials. This should considerably ease eastern Germany's current difficulty in finding export markets (for " less essentials " and even for some engineering products) and is expected to increase the trade turnover between the two parties from just under 5 billion roubles in 1956 to nearly 7½ billion a year during 1958-1960. The Soviet Union's share of eastern German trade turnover will thus rise from about 45 per cent to 50 per cent.

Changes in Long-term Plans

In the Soviet Union it was announced in September that a new long-term plan for 1959-1965 would overlap with the present 1956-1960 plan. The recent changes in industrial organization and management seem to be the main reason for this, though the discovery of " new big deposits of various raw materials and sources of energy in the last few years " has been advanced as another factor in the decision.[45] More specific changes of plan, involving revisions of the original 1960 targets, have been announced by Czechoslovakia and eastern Germany.

In eastern Germany the changes are described as " targets " established for 1960 and inspired by the original " directives " of March 1956, but in fact the differences are striking. The rates of growth of industrial output originally projected are now scaled down to something like the current rate and a somewhat more modest view is taken of possibilities in agriculture (see Table 10).

The data released on the revised investment programme for 1956-1960 do not permit a complete analysis of the changes from the original pattern. The total programme will remain at DM 55 billion, with an increase from DM 7 billion to DM 10 billion in credit or self-financed investment and an equivalent reduction in state investment. These changes result from increased emphasis on non-state dwelling construction and on investment in co-operative farms, though it seems that agriculture as a whole will receive a smaller share of the total programme than had originally been planned. Total investment in the housing sector will be substantially higher than originally planned and the number of dwellings to be completed during the five years has been raised from 260,000 to 360,000 (of which 230,000 during 1958-1960). Annual expenditure on dwelling construction during 1958-1960 is to be nearly DM 2 billion a year, as compared with under DM. 1.5 billion a year in the original five-year plan.

State investment in the industrial sector over the five-year period remains at the original figure of DM 22 billions but it seems that credit financed investment (which was 15 per cent of all industrial investment in the original plan) will be practically

[43] Nearly all these committees were created as standing bodies at the Berlin meeting of C.M.E.A. in May 1956 (having previously existed only on an ad hoc basis); committee offices have been recently set up in Sofia (agriculture), Prague (engineering), Warsaw (coal), Berlin (chemicals), and Budapest (timber and cellulose).

[44] See *Economic Bulletin for Europe*, Vol. 9, No. 1, pp. 27 and 37.

[45] Decree of 25 September.

TABLE 10

Changes in 1960 production targets in eastern Germany

	Directives	New targets	Actual 1956
	Annual percentage increases (1955-1960)		
Industry :			
Gross industrial production	9	6	6
of which :			
Engineering	11½	8½	8.8
Chemicals	9-10	6	8
Metallurgy	8-9	4½ [a]	7.6
Rolled steel	6	5½	6.7
Sulphuric acid	8½	8	3.2
Nitrogenous fertilizers	2½	2	2.5
Phosphorus	" 2½ times in 5 years "	" Double in 5 years "	32.8
Cement	11½	11½	10.0
Agriculture (yields in q./ha) :	*Amounts in 1960*		
Grain	28	26	25.2
Potatoes	220	200	189.7
Sugar beet	350	320	242.6
Milk per cow (kg)	3 050	2 800	2 364
Market production (thousand tons):			
Meat (live weight)	1 061	985	866
of which: Pork	770	686	408
Milk	4 700	4 100	3 300

Source : Neues Deutschland, 1 April 1956, 20 and 22 October 1957.
[a] Ministry of metal mining and metallurgy.

non-existent during 1958-1960, as a result of a concentration of resources on the most essential objectives. During these years coal and energy alone should receive DM 8 billion, out of the total of DM 14 billion for all industry, chemicals DM 1.5 billion, engineering the same (only a fraction of the original provision), building materials DM 1 billion and other industries token sums.

The lowering of the industrial output target for 1960, with the total investment plan for 1956 to 1960 practically unchanged, reflects in part the switch of investment resources towards sectors where the need is urgent but returns are slow (fuel), or which are not directly productive (housing). The consumer should benefit from the rise in dwelling construction above the levels originally planned, but the increase originally projected in retail trade turnover over the five-year period is now scaled down from 40 per cent to 22 per cent. This, nevertheless, represents a higher rate of increase than was actually achieved in 1956.

In contrast with the changes in the eastern German plan, the revisions of the 1956-1960 plan targets in Czechoslovakia seem to be of a minor character (see Table 11).

An already ambitious estimate of the rate of growth of industrial output has been revised upwards to a barely significant extent. The original estimates of investment during the plan period are practically unchanged in total, though the state sector is reduced by 11 per cent. Priority is still given to the fuel and power industries, but some change in the balance of the investment programme away from the engineering sector and towards dwelling construction and agriculture is intended.[46] The planned rise of about one-third in aggregate personal consumption over the period remains substantially the same as the original target. A somewhat greater emphasis on consumer needs is, however, reflected in the upward revision of the plans for dwelling construction and for output of consumers' durable goods and the products of light industry. The needs of the export market may also have been a motive for this last change, though the engineering industry is still expected to provide 49 per cent of Czechoslovak exports in 1960, as compared with 44 per cent in 1955 and 26 per cent in 1950.

The importance of improving the efficiency of the planning and production process, and of lessening the amount of productive effort going into low-priority or even unsaleable lines of output, has again been emphasized in connexion with the new targets. The main doubt raised by the plan is whether these objectives can be achieved concurrently with the maintenance of the present over-all rate of expansion.

The revision of plan targets has been accompanied in Czechoslovakia by the announcement of changes in economic planning and organization, to take effect in April 1958, which are in some ways reminiscent of the changes already put into effect in the Soviet Union. With the object of avoiding frequent and sudden changes in economic policy, long-term plans covering ten or fifteen years are intended in future to provide the stable framework within which five-year and annual plans can be elaborated. Within this framework it is proposed to transfer more responsibility for such decisions as the timing of the quicker-maturing investment projects to lower levels of management, though large projects will still be reserved for central decision and operation. The Prime Minister has stated that the main recipients of the powers transferred from the centre will be the national committees (local authorities),[47] and enterprises will gain more authority to decide on construction work, though the funds available will be closely linked with their own financial results. The national committees and enterprises will together direct more than 60 per cent of all investment activity in future.

[46] The preference to be given to agriculture appears to be linked with plans to speed up collectivization, and the collectivization drive has in fact been greatly intensified in recent months. On 1 July 1957, there were 8,553 advanced-type collective farms in existence: by the end of October the number had risen to 11,105 (*Rudé Právo*, 5 November 1957).

[47] See *Rudé Právo*, 5 October 1957.

TABLE 11

Changes in the Czechoslovak Plan for 1956 to 1960

	Unit	1955 Actual	1960		
			As planned in June 1956	1st revision early 1957	2nd revision Oct. 1957
Gross industrial production	Index	100	150		156
of which:					
Engineering		100	183	198	184
Metal consumers' goods for home market		100	207		224
Light industry		100	125		143
Building and construction		100	174	168	168
Dwellings completed over whole period	Thousands	51	300		330
Of which by State		35	250		210
Employment in national economy		4 296	4 635		4 754
Employment in industry [a]		1 637	1 743		1 836
Employment in building		355	403	384	393
Labour productivity in industry	Index	100	141	142	139
Labour productivity in building		100	153	156	152
Agricultural output:		100	130		130
Beef	Thousand tons liveweight	272	374		374
Pork		455	600		605
Milk	Million litres	3 415	4 980		4 771
Total sown area	Thousand hectares	4 865			5 084
State investment over whole period	Billion Kčs.	20 [b]	153	152	137 [b]
Other investment over period		4 [b]	24		35 [b]

Sources: *Rudé Právo*, 17 June 1956 and 4, 9, 18 and 29 October 1957, *Plánované Hospodářství*, No. 7 and 8, 1957, *Podniková Organisace*, No. 9, 1957.

[a] Employees, adjusted to a full-time basis, in the socialist sector only, excluding apprentices.

[b] In comparable 1957 prices.

In other fields the tasks laid down in detail in annual plans will be reduced. The practice of determining average wages in yearly plans is to be discontinued: instead, five-year norms will be set determining the relationship between the growth of wages and productivity.

In addition to these changes, a considerable amount of day-to-day responsibility (e.g., for negotiating supplies and marketing products) will be devolved to enterprises and associations of enterprises, partly in the hope of thus inculcating a more responsible attitude towards quality and observance of technical standards and delivery dates. A reduction in administrative staffs is intended to follow upon the narrowing of the scope of the work of central ministries.

THE POLISH ECONOMY SINCE 1950

1. The Six-year Economic Plan, 1950 to 1955

The Background

Poland emerged from the second world war with exceptionally great losses in human lives and in fixed capital. Six million persons (equal to one-fifth of the present population) are estimated to have perished as a result of military action or enemy persecution ; out of the total capital stock in the form of buildings, one-third was lost; [1] enormous efforts were needed to repair war-devastated production capacities in industry, agriculture and other sectors of the economy. Moreover, the economic situation was temporarily further complicated by territorial changes, and a massive transfer of population from the east to the newly acquired western provinces. The new territories had received extensions of productive capacity in mining and heavy industry during the war years and were more industrially developed than the previous eastern part of Poland. Their acquisition added to the economic wealth of the country, but it also added to the need for reconstruction of devastated towns and industrial establishments and called for adjustments by the immigrant population to unfamiliar conditions. The sum of the changes was completed by a transformation of the system of property relationships.

The three-year reconstruction plan (1947-1949) directed most of the available resources to the reconstruction of a few crucial sectors of the economy — such as transport, housing and mining — and, within manufacturing industry, to those partly damaged plants where small capital inputs could bring rapid returns. Foreign aid during the early post-war years supplemented Poland's own resources. UNRRA supplies amounted in all to $478 million, and in 1946 alone added about 11 per cent to national income. Credits from the Soviet Union included $100 million to finance the most urgent import needs.

At the end of the reconstruction period the main targets set by the plan had been achieved. Five years after the cessation of hostilities, agricultural production was about 80 per cent of the pre-war output on the same territory, which gave about the same output per head of the population as before the war.[2] Industrial production had revived in all plants which could be relatively easily put into commission, although with a considerable increase in manpower and lower productivity of labour. The over-all volume of industrial output in the post-war territory had about regained the pre-war level by 1949, and was therefore about 30 per cent greater per head of the population ;[3] but the pattern was markedly different, with output of light industry actually less per capita than before the war. Transport, trade, social facilities and government administration were operating fairly adequately. The national economy was nevertheless still in an unbalanced state ; and, at that stage, a new long-term economic plan was launched, aiming at the rapid creation of new industrial capacity.

The Global Results of the Plan

Detailed official estimates of the Polish national accounts in constant prices during the period of the Six-year Economic Plan exist at present only for the expenditure side of the accounts. However, sufficient data on production are available to permit an estimate of the growth of output over the period in each of the main sectors of the economy, and these are shown in Table 1.[4]

The over-all economic expansion during this period was rapid, even though slower than had been planned. Net national income in 1955 is estimated to have been nearly 75 per cent greater than in 1949, or about one-half greater per capita. Gross industrial output was nearly three times that of 1949, with an estimated corresponding increase in net output of some 110 per cent.

[1] Losses amounted in central Poland to 25 per cent of the total stock of buildings and in the western territories to 40 per cent. In Warsaw, 75 per cent of all buildings were destroyed, in Wroclaw 65 per cent and in Gdansk 55 per cent.

[2] See *Economic Survey of Europe since the War*, Geneva, 1953, p. 166. In 1939 the population of the present territory was about 32.1 million and in 1949 it was 24.6 million (i.e., 77 per cent of the pre-war figure).

[3] See *Economic Survey of Europe in 1948*, Geneva, 1949, p. 5.

[4] The figures in the first half of Table 1 can probably be regarded as a fair indication of trends in different sectors, but it is highly probable that future computations published in Poland, where work on this subject is now in progress, will give somewhat different results. The figures presented in the table differ from those published in the *Economic Survey of Europe in 1955*, p. 245, at a time when only scanty data were available on which to base the calculations.

TABLE 1

National income of Poland, 1949 to 1955

Billions of zlotys at 1950 prices and percentages

	Billions of zlotys						Annual actual percentage rates of growth		Percentage distribution			1955 Actual
	1949 Actual	1950 Actual	1953 Actual	1953 Plan	1955 Actual	1955 Plan	1949–1953	1953–1955	1950 Actual	1953 Actual	1955 Actual	*(1955 plan = 100)*
National income	80.3	95.3	117.9	133.9	138.9	167.3	10.1	8.6	100	100	100	83
Of which net output [a] of :												
Industry	34.3	39.8	56.3	64.4	72.0	83.6	13.2	13.1	42	48	52	86
Agriculture and forestry	26.1	28.0	27.6	34.0	30.2	38.8	1.4	4.6	29	23	22	78
Building and construction	4.1	5.8	10.4	11.7	9.8	15.1	26.2	−3.0	6	9	7	65
Transport and communications	4.2	4.5	5.8	6.1	6.7	8.0	8.0	7.5	5	5	5	84
Trade	11.0	12.3	13.1	16.7	17.2	20.4	4.5	14.6	13	11	12	84
Other [b]	0.6	4.9	4.7	1.0	3.0	1.4	—	—	5	4	2	—
Distribution of national income:												
Total consumption	62.1	67.3	70.2	96.4	93.0	120.5	3.1	15.1	71	60	67	77
Of which :												
Personal	55.5	60.1	62.2	79.0	80.5	98.7	2.9	13.8	63	53	58	82
Collective	6.6	7.2	8.0	17.4	12.5	21.7	4.9	3.2	8	7	9	58
Accumulation	18.2	28.0	47.7	37.5	45.9	46.8	27.3	−1.9	29	40	33	98
Of which :												
Fixed investment	13.2	17.8	28.2	32.1	31.2	40.2	20.9	5.2	19	24	22	78
Increase in stocks	5.0	10.2	19.5	5.4	14.7	6.7	40.5	−15.2	11	16	11	219

Sources : See Appendix.

[a] Assuming that depreciation takes a constant proportion of gross product of each sector.

[b] Including the foreign balance.

This achievement reflected an extraordinary concentration during the intervening years of all possible resources, including both import capacity and investment means, on fostering the growth of industry — and especially of heavy industry. Building and construction were practically limited to what was necessary to provide the essential facilities for the industrial development, including the housing needed for workers in new and expanding enterprises, and the development of transport lagged behind the rate of industrial growth to such an extent as constantly to hamper the general industrial expansion. Within the industrial sector, the engineering, metallurgical, chemicals and fuels branches absorbed the lion's share of investments.

Another striking feature of the development of production during these years is the failure to raise agricultural output during the period to anything approaching the planned extent. The Plan originally provided for an increase in gross output of agriculture by 50 per cent over the 1949 level, which was modified to 41 per cent when the estimates of actual output in 1949 were corrected upwards. The comparable increase actually achieved amounted to 20 per cent ; [5] but more important than the rise between the first and last years of the plan is the fact that during 1951 to 1955 average annual output was less than 6 per cent gross (and probably no more than 4 per cent net) above the average of the two years — one poor and one good — 1949 and 1950.

Optimism on the part of the planners, based partly on the very high rate of development of agricultural production in the preceding years — and this under particularly difficult conditions following upon the cessation of hostilities — was one reason for the subsequent disappointment. It had been hoped that this rate could be maintained, and the draft of the Plan was in fact completed in July 1950, when the results of the very good harvest for that year could already be fairly accurately estimated. There was also a conviction among the planners that the introduction of co-operative farming would not adversely affect agricultural output in the short run and would yield beneficial production results fairly soon. Finally, more supplies of fertilizers, equipment, etc., were expected to be provided for agriculture than were in the event available.

In fact, low agricultural output during 1951 to 1955, combined with growing demand for food at home, raised food import requirements — and this

[5] The figures in Table 1, showing a rise of 15 per cent, are adjusted to exclude from gross output feedings-stuffs fed to animals.

at a time when steadily rising imports of industrial equipment and raw materials were indispensable to the industrial expansion. The poor results in agriculture thus constituted a hindrance to the growth of industrial output as well as a check on the improvement of living standards.

Changes in the distribution of the national income during the period reveal the increasing share devoted to accumulation up to 1953, by which time it had reached the formidably high figure of 40 per cent.[6] But the change in the composition of total accumulation during these years is no less striking than the rise in the total volume. Fixed investment fell somewhat below the planned levels, especially in the later years, but this shortfall was more than offset by the phenomenal rise of investment in stocks, for which no precise explanation can be given. The normal growth of stocks in line with rising output can explain only a part of the increase, but there may also have been some build-up of stocks of critical foods and materials as a reserve against emergencies ; accumulating stocks of unsaleable goods resulting from an unsatisfactory pattern of output may have been another factor, and some of the waste in production processes may, through the accounting system, have inflated the estimate of stock building. Finally, it seems fairly clear that rising stocks of defence materials and equipment must also be included in these figures.

Despite the failure of national income to expand as fast as planned, therefore, the total volume of accumulation as here defined remained above or only very slightly below the planned levels throughout the period, partly as the result of a growth of defence production that had not been foreseen by the planning authorities. The insistence — up to 1954 — on continuing to increase the rate of fixed investment, despite this additional strain on a total volume of resources which was rising more slowly than originally expected, meant that the rise in total consumption barely kept pace with the growth of population between 1950 and 1953 and personal consumption per capita actually fell. A change of policy in 1954, involving cuts in defence expenditure and a slowing down of the rate of increase of fixed investment, permitted some rise in the share of consumption in national income and a growth of per capita consumption (personal and social) to about 20 per cent above the 1950 level by 1955 ; but the increase over the whole plan period fell far short of the target and was insufficient to prevent growing discontent, especially among industrial workers, and adverse effects on industrial productivity.[7]

The final year of the Six-year Plan therefore found the Polish economy with productive capacity greatly increased, though in a seriously unbalanced pattern, and with bottlenecks in key sectors, low agricultural output, foreign trade difficulties and low productivity in industry still hampering the smooth expansion of the national income.

[6] At 1950 prices. At the prices of later years the proportion is considerably lower (see Section 6 below).

[7] It is possible that the official estimates may somewhat underestimate the share of consumption in national income, and possibly the rate of growth of consumption also, to the extent that illegal supplements to wages — through such factors as theft of materials or absenteeism which covers supplementary employment — are reflected in the national accounts only in a lowered level of productivity and gross output. However, increments of real income attained by such means probably do not add greatly to an individual's sense of well-being and certainly contribute to inefficiency of production.

2. Industrial Development

The Pattern of Investment, 1950 to 1956

As has been mentioned, the 1950-1955 investment plan was devoted mainly to the enlargement of industrial capacity. The bulk of all investment (88 per cent of the total) was to be administered directly by the central planning authorities ; private investment, mostly in agriculture and in dwelling construction, was supposed to absorb something like 8 per cent of the total, and the remaining 4 per cent was to be invested by the socialist enterprises out of their own resources and independently of central control.

From the very beginning the execution of the plan proved difficult.[8] There was a shortage of experienced designers and of all grades of skilled labour in the building and construction industries; the growth of international political tension meant that hopes of technical help and of imports of equipment from western countries were disappointed, and supplies of both machinery and building materials were insufficient to meet the needs of the programme.[9] About 82 per cent of the total investment planned for 1950 to 1955 was in fact carried out. Priority for investments under central control ensured fulfilment of about 85 per cent of this part of the initial plan ; but still fewer resources than originally intended were left for investment in the private sectors of the economy. The

[8] For a full discussion of the difficulties and the achievements of the 1950 to 1955 investment plans in Poland and the other countries of eastern Europe, see the *Economic Survey of Europe in 1955*, Chapter 8.

[9] Trade contracts concluded with western countries before 1950 for delivery of various investment goods (such as rolling plant from the United States, tankers from Great Britain, and other supplies of equipment) were in the majority of cases not executed.

TABLE 2

Centrally planned gross investment in Poland, 1950 to 1955

Billions of zlotys at 1955 prices

A = planned investment B = actual investment

		1950	1951	1952	1953	1954	1955	1950 to 1955			1956	
		Billions of zlotys						Billions of zlotys	Percentage of total	B as percentage of A	Billions of zlotys [a]	Percentage of total
TOTAL	A	*19.7*	*25.5*	*32.1*	*37.2*	*41.8*	*47.3*	*203.6*	*100*			
	B	19.6	23.7	27.6	32.6	34.2	34.4	172.1	100	85	34.4	100
Industry	A	*8.0*	*10.9*	*14.3*	*16.4*	*18.0*	*19.8*	*87.3*	*43*			
	B	8.3	9.8	14.1	16.0	16.3	15.1	79.6	46	91	15.6	45
Building and construction enterprises	A	*0.7*	*0.8*	*0.8*	*0.8*	*0.9*	*1.0*	*5.0*	*3*			
	B	0.7	0.8	0.8	1.1	1.1	1.5	6.0	4	120	1.6	5
Agriculture and forestry	A	*2.0*	*2.9*	*3.6*	*4.3*	*5.1*	*6.0*	*24.2*	*12*			
	B	2.0	1.9	2.1	2.7	3.6	4.8	17.1	10	71	4.8	14
Transport and communications	A	*3.2*	*3.9*	*4.7*	*5.4*	*6.1*	*7.0*	*30.3*	*15*			
	B	3.1	3.5	3.5	3.8	3.7	3.5	21.0	12	69	3.1	9
Trade	A	*0.9*	*0.9*	*1.3*	*1.6*	*1.8*	*2.0*	*8.5*	*4*			
	B	0.9	1.0	1.0	1.2	1.0	1.0	6.1	4	72	0.9	3
Culture and social welfare	A	*1.7*	*2.0*	*2.7*	*3.4*	*3.8*	*4.3*	*17.9*	*9*			
	B	1.4	1.3	0.8	1.5	2.0	2.2	9.2	5	51	2.3	7
Housing	A	*1.4*	*2.0*	*2.3*	*3.0*	*3.6*	*4.6*	*16.9*	*8*			
	B	1.6	2.4	2.8	3.3	3.9	3.9	17.9	10	106	3.9	11
Local government	A	*0.6*	*0.8*	*1.1*	*1.2*	*1.3*	*1.4*	*6.4*	*3*			
	B	0.9	0.6	0.6	1.1	1.3	1.1	5.6	3	87	1.2	3
Administration [b]	A	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*1.2*	*1*			
	B	0.9	2.3	2.0	1.9	1.3	1.2	9.6	6	..	1.0	3
Reserves and other	A	*1.0*	*0.9*	*1.1*	*0.7*	*0.9*	*0.9*	*5.5*	*3*			

Sources : Six-year Economic Plan 1950 to 1955, Warsaw 1950; *Fulfilment of the Six-Year Plan in Investment and Building Activities*, Warsaw, 1956; Plan Fulfilment Report for 1956.

NOTE. — Planned total investment in the individual years and its distribution is based on the provisions of the original Six-year Economic Plan.

[a] Values are calculated from percentage changes since 1955 given in the Plan Fulfilment Report for 1956.

[b] Actual investment in administration is not comparable with the plan, because of changes in classification.

moderate quota of about 19 billion zlotys (in 1955 prices) foreseen for these sectors was eventually halved, and thus provided about 5 per cent of the total investment during the six-year period — mainly concentrated in the later years. To trace the main trends of investment activity in the early years, therefore, it is sufficient to look into the development of the centrally planned sector (see Table 2).

Once it became evident that a part of the programme had to be curtailed, the needs of industry and of housing[10] were given priority up to 1953. The major cuts in the programme affected cultural, health and social welfare investments, transport and agriculture ; and while, until 1954, industry received the full amounts of investment planned, investment in agriculture remained well below the planned levels and practically constant from year to year.

By 1954, it was clearly necessary to relax an investment drive which was over-straining the construction industries and leading to wasteful delays in completing projects and equipping new factories, as well as straining the resources of the economy as a whole. The danger of an excessive concentration on industrial development to the neglect of all other sectors, and especially of agriculture, was likewise apparent ; and the level of industrial investment was therefore stabilized, while investments in agriculture and social welfare slightly increased.

The changes in investment policy introduced in 1954 were maintained in subsequent years. The overall level of investment in the state sector remained stable in 1955 and 1956, and a similar stability was planned for 1957. Within the state sector, investment

[10] Planned housing development was, however, practically limited to dwellings for labour needed in the industrial centres and to the rebuilding of Warsaw.

TABLE 3

Gross fixed investment in socialized industry, 1950 to 1955

Millions of zlotys at 1955 prices

	1950	1951	1952	1953	1954	1955	1950–1955 distribution in percentages of total	
							Actual	Original Plan [a]
Total	7 483	10 005	13 016	15 986	16 053	14 555	*100*	*100*
Fuels	1 529	1 971	2 308	2 625	2 960	2 940	*18*	*15*
Of which: Hard coal	1 028	1 331	1 571	1 834	2 112	2 302	*13*	*11*
Electric power	906	1 050	1 068	1 373	1 516	1 801	*10*	*13*
Metallurgy	1 134	1 707	2 619	4 016	4 030	3 172	*22*	*19*
Of which: Raw materials	174	199	401	552	550	626	*3*	..
Engineering	1 233	1 820	2 990	3 207	2 572	2 045	*18*	*11*
Chemicals:	740	1 198	1 821	2 471	2 490	2 173	*14*	*9*
Building materials	633	689	803	863	857	735	*6*	*8*
Textiles	485	613	442	332	511	532	*4*	*7*
Other	823	957	965	1 099	1 117	1 157	*8*	*18*

Sources: Six-year Economic Plan, 1950 to 1955, Warsaw, 1950, Vol. 1, p. 226, and direct communication from the Polish Government.

NOTE. — Small differences between the totals shown here and in Table 2 are unexplained.

[a] Part of the difference from the actual structure may be due to the fact that the original plan was drawn up in 1950 prices. There may also have been small changes in classification during the period.

in industry fell slightly and the resources devoted to agriculture rose, and these were supplemented — especially in 1956 and 1957 — by increases in private investment in agriculture (see section 3 below). However, transport seems still to have remained relatively neglected up to the present time.

The Growth of Industrial Capacity

The core of the industrial investment plan for 1950 to 1955 was the development of the engineering, metallurgical and chemicals branches;[11] and provision was also made for the complementary development of domestic supplies of metal ores, building materials and fuels and energy, though the funds needed for these purposes seem to have been assessed at a very low level. These branches were intended to receive about 75 per cent of all investment in industry during the plan period, and in fact received an even larger share (see Table 3).

The shortcomings of the industrial development programme are by now a matter of fairly familiar history. In every country of eastern Europe priority was given in the early years to the development of heavy industry. There was no effective co-ordination of their individual development plans in this or any other sector, and difficulties in trade with western countries also encouraged an autarkic pattern of development within each country. The result, in Poland as elsewhere, was that an undue share of investment resources became locked up in large, slow-maturing schemes, especially in the metals and engineering sectors, and the relatively small investment means remaining for developments of lower priority tended to be too widely dispersed over a multitude of projects, thus tending to prolong the construction period.[12] Among other factors, artificially low prices for producers' goods, and especially building materials, encouraged grandiose construction plans and waste of materials; and the lack of designers experienced in modern techniques, and of access to experience in the most highly developed industrial countries, meant that out-of-date designs and processes were incorporated in some of the new plants.

The failure to expand the capacity of the building materials industries as fast as the needs of the plan demanded also tended to hold up completion of projects; and, in many instances, the amounts of materials required for projects were under-estimated, so that even if investment expenditure reached the planned levels the amounts of new capacity becoming available did not. Moreover, the demands of the defence programme slowed down the output of

[11] The relevant paragraph of the Six-year Economic Plan reads: "It is necessary to secure a rapid growth of industries producing investment goods; in particular, it is necessary to accelerate development of metallurgy, engineering and the chemical industries." *Dziennik Ustaw* (Official Gazette), 30 August, 1950, p. 429.

[12] In the chemical industry, for example, investment works were carried out during 1950 to 1955 in 90 per cent of all chemical plants in Poland and the plan provided for a 200-300 per cent increase in output of almost every type of product. It was therefore impossible to expand sufficiently the output of some of the most vital products such as artificial fertilizers.

machinery for civilian uses and delayed the equipment of new factories.

The claims of the defence industries on investment resources went, indeed, far beyond original expectations. During the five years 1951 to 1955, investment in the armament industries amounted to 11 per cent of total industrial investment,[13] or more than all investment allocated to the light industries during the period. The claims of investment in engineering development serving defence purposes twisted the development proportions established by the Plan not only towards heavy branches of industry and away from light industries, but also in favour of manufacturing capacities, particularly in engineering, to the detriment of the development of supplies of raw materials and fuels.[14]

The actual distribution of industrial investment during the plan period, as shown in Table 3, reflects the concentration of resources on engineering, metallurgy and chemicals up to 1953 and the slight realignment in favour of other sectors in subsequent years. The slowing down of the investment drive from 1954 onwards was accompanied by efforts to finish schemes already under way and to devote new investment to the enlargement of bottlenecks and to the light industries.

Industrial Production, Employment and Productivity

The increase in the productive capacity of Polish industry as a result of this tremendous investment effort has been impressive, though uneven.[15] The output capacity of ferrous and non-ferrous ore mines more than doubled between 1949 and 1955. Capacity for production of pig iron increased one and a half times, that for steel doubled, and new capacity was created for production of zinc, copper and aluminium. Total rolling capacity nearly tripled within the period, but construction of various parts of new rolling mills could not be sufficiently harmonized, so that the whole of the new capacity could not immediately be utilized.

The largest increases in productive capacity occurred in the engineering industries, and a number of important new lines of production have been started, such as mining machinery, diesel locomotives, shipbuilding, ships' engines, compressors, motor vehicles, steam turbines, machine tools, roller bearings and construction machinery. Some of the existing branches were strongly developed, such as production of railway rolling stock, metal-working machine tools, boilers and steam turbines. Considerable increases in capacity took place also in the chemicals industry : that for caustic and calcined soda, synthetic ammonia and nitrogenous and phosphorous fertilizers about doubled, and that for output of sulphuric acid went up by about 60 per cent.

The scarcities of coal, electric power, building materials and other raw materials that still hamper the expansion of over-all output (or of exports) are the result not only of shortfalls in the planned expansion of capacity in the past, but in some cases also of an original under-estimation of the rate of growth of capacity required or over-estimation of the results of a given level of investment expenditure.

Investment in the building materials industries fell behind the planned rates, but the needs were probably under-estimated in any case.[16] For many years, coal production fell short of the rates assumed in the plan mainly because optimistic assumptions about the growth of productivity were not fulfilled ;[17] but by 1956 inadequate coal mining capacity began to be a check on the growth of output as the possibilities of usefully raising the labour force diminished. Electric generating capacity installed during 1949 to 1955 represented a 60 per cent increase on that existing at the start of the period, but industrial consumption of power rose by 114 per cent over these years. With capacity already strained in 1949 this meant power cuts and the introduction of load-spreading night shifts among users, both of which raised industrial costs and hampered output. Despite the doubling of capacity between 1949 and 1955, output of chemical fertilizers has fallen well below needs and, until very recently, below the targets of the Six-year Plan.

Within the metal-making and processing sectors the chief difficulty arose from disproportionate rates of development at different stages of the production process. There has been a pronounced shortage of such rolled products as steel sheet, most dimensions of tubes, wires and steel hawser. Delays in construction of the steel mills in Warsaw specializing in

[13] S. Jedrychowski, *The Fundamental Principles of Economic Policy in Industry*, Warsaw, 1957, p. 26.

[14] Mr. H. Minc, the Vice-Premier responsible for economic affairs during the execution of the Plan, described investment in the defence industries as follows: " Development of the rearmament industry ... took the best available resources—steel sheet, roller bearings, tubes, precision machines, the best technicians. It made it impossible to fulfil investment plans in a number of other branches of industry." " One may state that tremendous ... defence efforts, particularly in the years 1951 to 1955, influenced considerably the development proportions of the national economy; they were a considerable burden on the economy, which has been felt ever since, and one of the main factors responsible for non-execution of the plan targets for the standard of living." *Nowe Drogi*, No. 10, Warsaw, October 1956.

[15] See Appendix Table II.

[16] Over the six years 1949-1955, output of some important building materials increased as follows (in percentages): lime, 11; bricks, 20; plate glass, 17; cement, 65; while net output of the building and construction industries rose by about 140 per cent.

[17] It was planned to increase productivity of labour (output per man-year) in coal mining during the Six-year Plan by 37 per cent. In reality, productivity in 1955 fell slightly below the 1949 level.

production of special steels caused drastic shortages of high-quality steels.[18] As a result, many engineering plants have been running at a mere 30-50 per cent of capacity[19] — and there are numerous large plants with an even worse record. The engineering industry has been virtually reduced to a one-shift basis.[20]

The shortage of supplies had an unfavourable influence on co-operation and specialization among engineering enterprises. To avoid dependence on other plants, where deliveries were irregular, many industrial establishments invested uneconomically in such departments as castings, forgings and small shops for production of spare parts. Insufficient production in the electro-technical industry, and particularly of electric motors, electric control-gear and electric appliances for transport equipment, constituted a hindrance to other branches of production, and there were also shortages of machine tools for casting and forging machinery parts.[21]

As has been mentioned, the great investment efforts directed towards processing capacity in the heavy industries, chemicals, etc., left few resources to spare for the light industries. Moreover, in the early years considerable numbers of small industrial establishments and handicraft shops were closed and productive capacity thus diminished. The textile industry provides a striking example of this tendency — with a 25 per cent rise in the number of cotton spindles from 1949 to 1955, but practically no change in the numbers of other machines and even a fall in the number of looms in the wool sector. In the food processing industries, also, the indications are of only a slow rise in capacity. One exception to the general rule of a slower rate of progress in light industry is provided by the timber and paper sector, where over-cutting of the forests allowed timber output to rise rapidly and benefited the branches depending on this as a raw material.

But despite the uneven rates of growth of output in different sectors, and the persistence of some hampering bottlenecks, gross industrial output has more than trebled over the last eight years. Net output seems to have been growing at an annual rate of about 13 per cent up to 1955 and since then at a rate of about 9 per cent a year.[22] Employment in socialist industry has increased during 1949 to 1957 by about 1.2 million (67 per cent) so that productivity appears to have risen by about 5 per cent a year even though the full utilization of the industrial labour force has been inhibited in many branches, sometimes by the uneven flow of supplies of materials and energy and at others by absenteeism and lack of interest on the part of the workers.

[18] The share of special steels in the total output of steel was planned to be 15 per cent in 1955 but in fact was only 12.6 per cent.

[19] *Nowe Drogi*, No. 9, 1956, p. 13.

[20] *Ekonomista*, No. 6, 1956, p. 16.

[21] The share of machines for pressing metals is at present estimated at 10-15 per cent of the total metal-working machines, while in highly industrially developed countries the share is normally about 30 per cent. *Nowe Drogi*, No. 9, 1956, p. 13.

[22] See Appendix Tables I to III and Tables 1 and 13.

3. Agriculture

Until less than two years ago, agriculture remained one of the least satisfactory sectors of the Polish economy; and there is a striking contrast between the rapid, if uneven, growth of industrial production and the slow expansion of agriculture. After an upward leap of production in 1950, due in part to good weather, agriculture stagnated until 1954, with over-all output no greater than the average of the one good and the one bad year, 1949 and 1950. The subsequent expansion brought the total volume of production (net of fodder fed to animals) to a level only some 20 per cent higher by 1956. Plant production did not rise above the 1949-50 rate over the succeeding five years as a whole, but animal production increased, with a consequent rise in fodder requirements and hence in imports of grain [23] (see Table 4). Thus during most of this period home-produced food supplies per head of the population fell slightly ; and only in 1955, by a very small margin, and in 1956 and 1957, more substantially, have they been above the 1949-1950 average level.

[23]

Imports of Grain (in thousands of tons)

	1949	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*
Wheat . .	165	236	263	225	69	428	739	664
Rye . . .	—	—	—	280	94	777	415	309
Total . .	165	236	263	505	163	1205	1154	973

Source : Handel Zagraniczny, No. 10, 1956, p. 16.

Land Use, Yields and Harvests

There has been no significant alteration in the total agricultural area or its use since 1950. The area under arable land, orchards and gardens, meadows and pastures has remained practically unchanged ; but an increase in the area harvested by about 0.4 million hectares, or roughly by 3 per cent, indicates some diminution in waste and fallow land.[24]

The Six-year Plan provided for some modification of the structure of sowings to ameliorate crop rotation and to shift some land from grain to more labour-intensive crops. The change, moderate in itself, was

[24] For data on sown area yields and harvests of the main crops, see Appendix Table IV.

TABLE 4

Value of agricultural production, 1949 to 1956

Millions of zlotys at 1938 prices ; years or yearly averages

	1949–1950	1951–1955		1955	1956	Index numbers			
	Actual	Plan	Actual	Actual	Actual	1951–1955 (1949–1950 = 100)	1955 (1949–1950 = 100)	1956 (1949–1950 = 100)	1951–1955 (Plan = 100)
Total agricultural production [a]	8 429	10 023	8 719	9 402	10 092	104	112	120	87
Gross plant production	6 345	7 421	6 371	6 847	7 361	100	108	116	86
Gross animal production	4 341	5 420	4 891	5 322	5 689	113	123	131	90
Value of plant production per hectare of agricultural land (in zlotys)	310	356	312	336	361	101	108	116	88
State farms : [b]									
Gross plant production	485	826	655	786	..	135	162	..	79
Gross animal production	122	337	245	291	..	200	239	..	73
Value of plant production per hectare of agricultural land (in zlotys)	288	389	267	311	..	93	108	..	69

Sources : Fulfilment of the Six-year Plan, Warsaw 1956, p. 84 *et seq.*; and direct communication from the Polish Government.

[a] Gross plant production *plus* gross animal production *less* fodder fed to animals. It is assumed that the ratio of fodder fed to animals to gross value of animal production is the same in all years as it was in 1947—i.e. 52 per cent. (See *Dochód Narodowy Polski, 1947*).

[b] Between 1949 and 1957 the acreage of state farms increased by 58 per cent—i.e., by 14 per cent more than was provided for in the Plan.

practically achieved by 1955, mainly through changes in the socialist sector of agriculture which could be directed by administrative orders. The share of the area under grain fell, both in the state farms and in co-operative farms ; but in the private farms it diminished less, though conditions for grain crops could normally be expected to be less favourable on private farms than in the socialist sector organized on the basis of large-scale farming. However, the state farms, though always chronically short of manpower, kept the share of land under industrial plants relatively higher than did the private sector. In both these branches of production, therefore, the trend of crop specialization seems to have run counter to the relative natural advantages offered by small and by large-scale farming.

Special stress was laid on increasing the area under sugar beet ; and in pursuit of an increase in sugar production — one of the leading Polish exports to other eastern European countries — soil which could not always guarantee good results was taken under cultivation, and yields fell.[25] Yields of cereals, on the other hand, have been rising, though even in 1955 and 1956 they still fell far short of the targets of the Six-year Plan. It is a noticeable feature of developments during the years since 1950 that, for practically every crop, yields on state farms have fallen despite the preference given to them in supplies of materials, chemical fertilizers, etc., while yields on private farms rose even though they were subjected to various forms of adverse discrimination.

Livestock and Output of Animal Products

While crop production remained static, there was a steady rise in livestock numbers up to 1955, and this rise has continued. The number of horses fell, in line with the diminishing area of land under private farming and the increasing role of services supplied by machine and tractor stations; [26] but cattle herds in 1957 are nearly 15 per cent greater than in 1950, pig numbers have risen by 30 per cent, and the number of sheep by 80 per cent (see Table 5).

Greater ease in obtaining fodder has been one factor encouraging a more rapid expansion of pig and sheep than of cattle numbers. State supplies of fodder (mainly bran, which was in part imported) have encouraged pig production, and Government action was taken to foster sheep rearing in order to relieve the shortage of wool. But a further factor tending to encourage a switch from cattle to other livestock up to last year was probably the reluctance of farmers to undertake the relatively long-term investment involved in cattle breeding while uncertain about the future of their farms or burdened with heavy taxation.

Despite the rapid growth of the socialist sector of agriculture, livestock has remained to an overwhelming

[25] Similar developments are to be observed in other eastern European countries. For data on sugar production in eastern Germany and Rumania see " Current Economic Developments in Europe ", section 4 in this *Bulletin*.

[26] With the dissolution of a high proportion of collective farms this year and greater activity in agriculture, demand for working horses has suddenly risen sharply.

TABLE 5

Total and privately owned[a] animal stock, 1950 to 1956

Million head

		Cattle		Pigs	Sheep	Horses
		Total	*of which :* cows			
1950	Total	7.2	4.9	9.4	2.2	2.8
	Percentage privately owned	*96*	*98*	*95*	*94*	*95*
1955	Total	7.9	5.5	10.9	4.2	2.6
	Percentage privately owned	*89*	*93*	*84*	*86*	*89*
1956	Total	8.4	5.6	11.6	4.2	2.5
	Percentage privately owned	*89*	..	*84*	*85*	*88*
1957	Total	8.2	5.8	12.3	4.0	2.6

Sources : Zwierzeta Gospodarcze 1950-1955, Warsaw, 1956; and direct communication from the Polish Government.
[a] Including privately owned animals in state and co-operative farms.

extent under private ownership. About half the animals in co-operative farms up to 1956 were bred privately by the farm members, and even in state farms this share amounted to about 20 per cent. In 1956, animals belonging to private owners in all sectors still represented about nine-tenths of the total, and the density of livestock was naturally much greater in private farms than elsewhere.[27]

[27] The actual distribution amongst different types of farm in 1956 was as follows (numbers per 100 hectares of agricultural land):

	Cattle	*Pigs*	*Sheep*	*Horses*
All country average	41	57	21	13
State farms	24	38	14	6
Co-operative farms	34	53	30	7
of which animals commonly owned	13	21	12	6
Individual farms	46	59	22	15

Source : As for Table 5.

The same phenomenon—lower yields in state farms than in the private sector—can be observed in livestock farming as in plant production ; but the general

TABLE 6

Yields and output of animal products

Annual rates

	1949–50	1951–55	1956	Index 1956 (1949–50 = 100)
Meat yields (in kg. of liveweight per beast):				
Cattle	331	322	310	*94*
Of which :				
Calves	43	44	44	*102*
Pigs	126	115	118	*94*
Of which :				
Lard pigs	130	120	119 [a]	*92 [a]*
Bacon pigs	90	88	86 [a]	*96 [a]*
Sheep	36	37	37	*103*
Milk yields (in thousand litres per cow)	1.55	1.73	1.78	*115*
Wool yields (in kg. per sheep)	1.8	2.1	2.3	*128*
Meat production (in thousand tons liveweight)	1 321	1 504	1 893	*143*
Of which :				
Beef	289	300	398	*115*
Veal	76	110	108	*142*
Pork	945	1 065	1 333	*141*
Mutton	11	29	54	*491*
Milk production (in million litres)	7 450	9 093	9 979	*134*
Eggs (in millions)	3 300	3 920	4 253	*129*

Source : Fulfilment of the Six-year Plan, Warsaw, 1956 and direct communication from the Polish Government. [a] 1955.

trend of productivity in livestock farming (as illustrated by the figures in Table 6) can hardly be considered satisfactory. Lack of fodder has reduced average slaughter weights ; and, even though milk yields have risen, they are still very low (only about three-quarters of the level recorded in France and about 60 per cent of those of western Germany or the United Kingdom).

These results reflect the inadequacy of fodder supplies, and they might have been greatly improved if more effort had been directed to increasing the availability of fodder before raising animal numbers.

Supplies to Agriculture

However, no great improvement on the generally rather poor record of agricultural output up to 1956 could have been expected, given the concentration of resources on industrial expansion that has already been described, combined with the effects of the collectivization policy and its subsidiary manifestations on the morale of the farm population.

Out of the small part of the centrally planned investment resources allocated to agriculture under the Six-year Plan (see Table 2) an overwhelmingly high proportion was concentrated on the socialist sector, although this sector at no point accounted for as much as 25 per cent of all agricultural land. When it is borne in mind that the greater part of investment in land improvement benefited the socialist sector, it is apparent from the figures in Table 7 that (assuming the years covered to be typical) less than 15 per cent of total state investment in agriculture was in forms to benefit private farms. Even in the socialist sector, as has been shown, investment fell far behind the levels planned. Out of 820 machine and tractor stations planned, only 424 were completed and equipped during the plan period, and even with the priority for supplies of equipment given to state farms, the degree of mechanization hardly improved.

Individual farms were still worse supplied, since the production of small-scale machinery suited to their needs was practically discontinued. The number of machines per unit of land in private farms fell between 1950 and 1957 in almost every category ; and this occurred despite the sales to individual farms of machinery belonging to parish machine stations which took place at the end of 1956 and early in 1957.[28] Moreover, supplies of building materials to individual farmers have always been extremely low and in the early years could not cover even repair and maintenance of agricultural buildings. No estimate of the amount of fixed capital in agricultural buildings exists, but there is little doubt that it was less in 1955 than

[28] See Appendix Table V.

TABLE 7

Centrally planned investment in agriculture, 1953 to 1955

In millions of zlotys at 1955 prices

	1953	1954	1955	1953–1955 Percentage
TOTAL	2 600	3 534	4 632	*100*
State farms [a]	1 021	1 533	2 023	*42*
MTS	356	513	808	*16*
Co-operative farms [a]	269	385	415	*10*
Land improvement	432	615	851	*17*
Electrification	133	158	227	*5*
Agricultural education institutions	17	51	71	*1*
Veterinary services	19	24	54	*1*
Others	353	255	183	*8*

Source : Statistical Yearbook, 1956, p. 182.
[a] Excluding electrification and land improvement.

in 1949.[29] During the first years of the Six-year Plan the socialist sector of agriculture was strongly favoured also in the allocation of fertilizers, and individual farms received (per hectare) about one third of what was allocated to the state and collective farms[30] (see Table 8).

However, the policy changes of 1954 and 1955 greatly improved the situation of individual farmers. Higher prices for farm produce and reductions in obligatory deliveries gave private farmers more incentive to invest ; building materials and other supplies were somewhat improved, and fertilizer allocations were revised to about half the rate of those to the state sector. Private investment in agriculture in 1955 is estimated to have accounted for about one-third of all agricultural investment in that year and increased in volume between 1955 and 1956 by over 20 per cent.

Agricultural Policy

Undoubtedly the adverse effects of the relative starvation of agriculture, both of investment means and of other supplies, were accentuated by the impact of policies to encourage collectivization. The lack of adequate investment resources made it impossible so to equip the majority of collective farms that

[29] A computation for Bydgoszcz Voievodship, one of the relatively economically developed provinces in Poland, shows that credits needed this year to bring agricultural buildings to the standard existing in 1949 would have had to be higher than all credits destined for the purpose in the whole of the country (*Zycie Gospodarcze*, No. 13, 1957, p. 2).

[30] The fact that private farms possess greater numbers of domestic animals per hectare diminishes the difference in land fertilization since they can use more natural manure.

individual peasants would have a positive incentive to join them, and pressure to join co-operatives was in fact exercised by means of discrimination of various kinds against private farming.

The data necessary to evaluate the financial results and productive activity of the co-operative farms in the past are not available. The co-operatives were given substantial investment credits, better terms in obligatory procurements than individual farms, lower taxes and better supplies. But against the background of these privileges their performance in relation to the private farms seems to have been unsatisfactory.[31]

[31] For a note on the discussion of economic policy towards collective farms that was taking place in Poland in 1956 see the *Bulletin*, Vol. 8, No. 3, pp. 31 and 32. Other comments on the disappointing results of collectivization have recently been published in Poland, for example: " In 1956 in about 2000 co-operative farms, debts per hectare of their land were higher than annual income, and current credits higher than income distributed among the members." (Mr. B. Galeski in *Przeglad Kulturalny*, No. 42, 1956.)

" In the majority of cases, the co-operative farm means a deterioration in individual incentives for work. It weakens the degree of interest in the work and its results. On the other hand ... (because of advantages of large-scale farming) economic efficiency should increase in absolute figures. Whether it increased and when it increased we do not know for the simple reason that this problem has hitherto been treated in a propaganda way, and there is no real scientific analysis of it." (Vice-Chairman of the Economic Council, Mr. E. Lipinski, *Nowa Kultura*, Warsaw, 9 September 1956.)

TABLE 8

Supplies of artificial fertilizers

Pure content in kg per ha of area sown

		N	P_2O_5	K_2O
Total agriculture	1949	4.8	5.5	7.4
	1954	8.0	8.0	15.3
	1955	8.9	9.5	16.9
	1956	10.6	9.8	17.7
State farms	1949	10.2	11.8	23.8
	1954	15.9	16.0	31.9
	1955	15.3	13.5	30.4
	1956	15.6	14.6	31.3
Co-operative farms	1954	13.7	13.5	25.6
	1955	15.1	16.0	27.5
	1956	17.2	15.5	27.9
Individual farms	1949	4.3	5.0	6.1
	1954	6.1	6.0	11.3
	1955	7.0	7.9	13.2
	1956	8.8	8.2	14.0

Sources : Fulfilment of the Six-year plan, Warsaw, 1956, p. 119; *Statistical Yearbook, 1956*, p. 175 *et seq.* and direct communication from the Polish Government.

TABLE 9

Structure of individual farms

Size of farm (hectares)	Number of farms (thousands)		Agricultural area (thousand hectares [a])	
	1950	1954	1950	1954
0.5–2	622	673	824	883
2–4	708	739	2 271	2 360
4–7	761	751	4 523	4 384
7–10	499	420	4 597	3 822
10–14	246	193	3 150	2 441
14–20	93	69	1 667	1 236
over 20	40	29	1 282	931
TOTAL	2 969	2 874	18 314	16 057

Sources : Statistical Yearbook, 1956 ; Fulfilment of the Six-year Plan, Warsaw, 1956.

[a] Assuming that the percentage distribution of the agricultural area under individual farms is the same as the distribution of the total area under such farms.

Certainly their members were not, in general, satisfied, and at the end of 1956 four-fifths of all collective farms were spontaneously dissolved.

The results obtained in the state farms were still more disappointing. By 1955, they cultivated about 14 per cent of the total agricultural area, usually of good quality, and represented therefore a tangible weight in total Polish agriculture. Despite their privileged position, however, their performance was not only far behind the planned targets, but — as has already been mentioned — was in many respects inferior to that of individual farms. Among the main reasons for their lack of success appear to have been the low professional standard of managers and high turnover in managerial posts, shortages of dwellings and therefore of labour, insufficient supplies of equipment and building materials, a high rate of turnover in land, and the fact that they were often obliged to take into temporary cultivation scattered strips of land which would not otherwise have been used.

But at the same time as these not wholly successful experiments in new forms of organization were being made, fiscal and other measures discriminating against private farming brought about a deterioration in the structure of individual farms. Between 1950 and 1955 there was a tendency for the number of small, inefficient farms to rise and for the number of medium and large farms to decline, and the share of all privately owned farm land under farms of less than 7 hectares greatly increased (see Table 9). Moreover, efforts to consolidate scattered private holdings were discontinued, and the dispersion even became greater.

TABLE 10

Prices of some commodities purchased by farmers

Commodity	Unit	In kilogrammes of rye				In kilogrammes of pork			
		1938	1955			1938	1955		
			Obligatory deliveries at 61 zl.	Contractual deliveries at 245 zl.	Free market at 307 zl.		Obligatory deliveries at 6.94 zl.	Contractual deliveries at 12.47 zl.	Free market at 17.80 zl.
Plough	Unit	146	562	139	112	36	50	28	19
Phosphorous fertilizer	100 kg.	49	101	25	21	12	9	5	4
Nitrogen fertilizer (20.5%)		143	161	40	32	18	14	8	6
Potassium fertilizer		41	116	29	23	5	10	6	4
Animal potash	10 units	100	296	74	59	25	26	15	10
Sugar	10 kg.	50	197	49	39	13	17	10	7
Salt		16	20	5	4	4	2	1	1
Whisky	1 litre	21	107	27	21	5	9	5	4
Soap	10 kg.	72	262	65	52	18	23	13	9
Coal	100 kg.	24	41	10	8	6	4	2	1
Kerosene	10 litres	19	66	16	13	5	6	3	2
Cement	1 ton	168	945	235	188	31	83	46	32
Men's shoes	1 pair	96	573	143	114	18	50	28	20
Bricks	Thousand	226	763	190	152	42	67	37	26
Lime	1 ton	113	318	79	63	21	28	16	11

Source : Ekonomista, No. 4, 1957, p. 136.

The possibility of profitable operation for any farm depended to a large extent on the share of output delivered at low obligatory procurement prices,[32] on the size of farm, on the classification of land — which was not always in accordance with the real quality of soil — on the possibilities of purchasing investment and consumption goods at official prices and without additional payment to the middleman, and on numerous other financial and administrative measures. Among the administrative measures discouraging efficient private farming was the haphazard campaign against " kulaks ", based on no standard definition of this category of farmer. The result was discrimination in some areas against large farmers, in others against any farmer who was particularly efficient or who offended against any of the sometimes strange criteria adopted by the local authorities.

Table 10 illustrates the changes since 1938 in prices of some important commodities purchased by farmers. Values are expressed in terms of kilogrammes of rye and of kilogrammes of pork, both for pre-war and for 1955. As can be seen, the change in the terms of trade of any farm up to 1955 depended strongly on the share of its total production sold as obligatory deliveries. In cases where a great part of production was sold under obligatory deliveries, the real cash income of farmers as compared with pre-war probably deteriorated considerably.[33]

The situation of any farm which could achieve a high proportion of free market sales was clearly much more comfortable, though it is possible that all the figures in the table give a somewhat too favourable picture of the farmer's position through being based on official prices of the goods he had to buy.[34] If, as often happened, farmers had to buy consumers' goods from channels other than those of socialist trade, prices tended to be higher; and even to obtain fertilizers it was often necessary to pay more than the official prices. Moreover, both in relation to demands for obligatory deliveries of produce at low prices and in liability to taxation, individual farms were treated more harshly than the co-operative sector, and large farms were treated more harshly than small

[32] Grain, potatoes, meat and milk have been subject to obligatory deliveries.

[33] It must, however, be remembered that the agricultural policies of these years tended to discourage sales off farms more than they discouraged production. Consumption of food by the agricultural population certainly rose much more than that of the urban population, and the total volume of consumption per capita probably rose more for farm families than for the families of urban workers (see section 4 below).

[34] It is interesting to note the more favourable terms of trade obtained by delivering pork (or, to a lesser extent, other meat) rather than rye (or other grain)—a factor helping to explain the disproportionate expansion of livestock production in relation to cereals production that has already been mentioned.

farms. Equally unreasonably, there was a tendency to burden efficient farms, even in the co-operative sector, with particularly heavy obligatory deliveries and taxes, while the inefficient co-operatives were lavishly subsidized.

Polish agricultural policy was, consequently, confronted with a dilemma. The very slow growth of agricultural output was causing difficulties in raising consumption standards, inhibiting the growth of exports and adding to the import bill. It was thus vitally necessary to stimulate more rapid expansion, but more than three-quarters of all agricultural land still remained under private farming. It would clearly have been impossible to speed up the growth of over-all output significantly without offering better facilities and larger inducements to private farmers, who, even in the relatively disadvantageous conditions imposed upon them, had a better production record than the second largest agricultural sector — that of the state farms. However, to offer better terms to private farmers would itself have tended to delay the spread of collectivization — for so long regarded as not only politically but also economically the most desirable form of agricultural organization.

The cautious efforts to improve incentives for farmers made during 1955 and 1956 left the basic problem unresolved; but the wholesale dissolution of co-operative farms at the end of 1956 was followed by a radical revision of agricultural policies, designed largely to increase incentives to individual farmers, who now cultivate 85 per cent of the whole agricultural area.

Obligatory deliveries of milk have been abolished, and for grain diminished by one-third, and progressive delivery quotas for large farms, as well as other discriminatory measures, have been tangibly diminished.[35] Farmers have also been offered possibilities of varying the assortment of products included in their obligatory deliveries, and procurement prices have been raised. To match the growing income of the rural population, resulting in part from these measures, supplies of both investment goods and consumers' goods to agriculture have already been considerably increased though their prices have been raised. Free turnover of land among private farmers—subject to the limit on the maximum size of farm laid down in the 1947 Land Reform—is now permitted, and the building up of farms to a size of 15 to 20 hectares is regarded with approval. The Government has decided to sell to individual farmers about 0.5 million hectares of land (of which 0.2 million hectares is state reserve land and 0.3 million hectares belongs to state farms) in order to improve the structure of private farms.

It has been stressed that the collectivization of agriculture remains the main goal; but it is to be regarded as a long-term objective to be pursued slowly and linked with growing investment and transformation of agricultural techniques and with the willingness of peasants to join co-operative farms. In the short term, the Government will support all forms of agricultural co-operation organized by farmers themselves. It has been decided to encourage the formation of "village centres" run by farmers, which will engage in activities such as education of village youth, improvement of production techniques, purchases of agricultural products, distribution of investment and consumption goods in the countryside, fostering of handicraft or industrial activities on a local basis, etc. It is hoped that such village centres will encourage interest in co-operative activity and facilitate the voluntary spread of collective forms of farm organization in the future.

Meanwhile, efforts are to be made to transform the state farms and the remaining collective farms into thoroughly efficient enterprises. State farms are to be consolidated into economic production units, where necessary, by selling to individual or collective farms outlying land which they cannot cultivate efficiently; the professional qualifications required of managers are to be raised, and they are then to be given more responsibility for planning production, purchasing supplies, etc.[36]

The task of raising the efficiency of the remaining collective farms is likely to be a complicated one, since the surviving farms are not always those which were economically strongest. The remaining farms often have a fairly high proportion of previously landless peasants, and thus a high proportion of land allocated by the state, and they tend also to include a large proportion of relatively small farms. It seems likely that in many cases help in the form of technical advice, credits, etc., will be needed to supplement the negative stimulus to efficiency given by the withdrawal of the subsidies formerly too easily available.

Co-operative farms	*1956 September*	*1957 March*
Number of farms	10 203	1 752
Area per farm, in hectares	197	146
Number of families per farm	21	15
Landless families per 100 families	16	24
Land allocated by the state per 100 ha of total farm area, in ha.	16	27

Source : Spółdzielnie Produkcyjne, w I kwartale 1957, Warsaw, 1957, p. 6.

[35] Obligatory deliveries have been abolished for very small farms (less than 2 hectares).

[36] See *Trybuna Ludu*, 24 August 1957.

4. Consumption and Living Standards

The rhythm of change of average per capita consumption over the last seven years has already been noted: there was a fall from 1950 to 1953 reversed only as a reorientation of agricultural policies raised farm production and as the defence and investment drives were relaxed. It is fairly clear that the reduction of living standards during the first phase fell more heavily upon the population outside agriculture than on the farm population; and at least up to 1956 the distribution of per capita income almost certainly changed in favour of the agricultural population.

Given the overwhelming importance of food in total consumption, especially in the early years, this conclusion is not inconsistent with the fact that until 1954 the average real cash income of farmers certainly fell. Confronted by low prices for obligatory deliveries, scarcity of supplies of manufactured consumers' goods and investment goods and with no incentive to save, farmers increased their consumption of their own produce.

Studies of food consumption standards suggest that before 1949 per capita consumption was slightly lower in the countryside than in the towns; but by 1953 per capita consumption on farms of meat, milk and sugar had increased by from 31 to 77 per cent and of eggs and fats by from 7 to 20 per cent according to the type of farm.[37] For the country as a whole, per capita consumption of meat and animal fats rose between 1949 and 1953 by one-quarter and of milk, milk products, sugar and eggs by less than 10 per cent.[38] It is clear that by 1954/55 farm consumption of a number of higher-quality foods was above the national average:

Annual per capita Consumption 1954/55

	Unit	*National average*	*Farm population*
Grain products	Kg.	168	158
Sugar		23	17
Butter		5	7
Animal fats		6	11
Meat and meat products		32	31
Eggs	Number	136	185

Sources: Direct communication from the Polish Government, and *Trybuna Ludu*, 3 November 1957.

In a period of acute scarcity of all types of consumers' goods, and given the greater ease with which incomes of urban workers and the supplies available to them could be controlled, a re-distribution of consumption in favour of the farm population was practically inevitable, and it seems that this involved a marked fall in the real incomes of urban workers. The volume of retail trade turnover per head and average real wages fell between 1950 and 1953, and it seems doubttul whether the fall in real wages was fully reversed until some time in 1955 or even 1956 (see Table 11).[39] Thereafter, both real wages and real farm incomes probably rose by about 10 per cent. between 1956 and 1957 (see section 6 below).

The estimates of changes in real wages shown in Table 11 probably give a somewhat too unfavourable impression of the trend of average urban living standards. Social benefits of all kinds — including not only cash supplements to wages, but also meals in factory canteens, etc. — rose during the period, and the rapid rise in collective consumption shown in the table tended to benefit the urban population more than those in rural areas. But the over-all changes in consumption or in wage incomes of course conceal marked variations in the trends of living standards of different groups of workers.

One group in the rural population which particularly increased its consumption consists of people who work outside agriculture, but who still possess small family farms. There are about one million such worker-peasants. Their income consists of wages together with income from their farms, and they are burdened with only relatively small taxes; and their consumption, both of food and of manufactured goods, is certainly above the agricultural average. Among the town population, workers in basic industries with incentive wage systems generally earned more than those working in trades considered less important; and their relatively advantageous position was steadily improved until very recently. At the other end of the scale were families in which there was only one wage-earner in one of the less-favoured occupations, the old and the disabled, and little was done to alleviate their lot until 1956.[40] A rise in wages and pensions (adding 5 billion zlotys, or about 4 per cent, to the annual total of such incomes) in April 1956 was intended mainly to guarantee a monthly minimum wage of 500 zlotys; but, in fact, the major part went in wage increases to those workers whose bargaining power was the strongest, such as miners, metallurgical

[37] *Ekonomista*, No. 5-6, Warsaw, 1955, pp. 24 and 25.

[38] See Appendix Table VI. The whole of the rise in consumption of meat and animal fats occurred between 1949 and 1950.

[39] In default of any better alternative, the index of retail prices shown in the table has been calculated by using as weights the expenditure pattern of a pre-war working class family, as slightly modified in 1947. (These were used for the Polish cost-of-living index in the immediate post-war years.) Such an out-of-date system of weights is, of course, objectionable; but allowing for the fact that consumption was confined to little more than basic necessities up to about 1955, the estimate of changes in real wages in the earlier years is probably not a significant distortion of the actual trend.

[40] For a discussion of the variations in living standards and of changes in social policies and wage systems in recent years, see the *Economic Bulletin for Europe*, Vol. 8, No. 2, pp. 33-40, and the Survey for 1956, Chapter 1, sections 5 and 6.

TABLE 11

Indicators of changes in living standards, 1949 to 1956

	1949	1950	1951	1952	1953	1954	1955	1956
	Values	*Index numbers 1949 = 100*						
Per capita consumption (in zlotys at 1950 prices):								
Personal consumption	2 275	107	109	108	104	121	130	..
Collective consumption	270	107	124	115	113	134	170	..
Retail trade turnover (in billions of zlotys at 1950 prices):								
Total socialist and private trade	49.9	112	119	123	119	142	156	180
of which:								
Public catering	0.5	360	580	620	800	1 000	1 120	1 280
Socialist retail trade	29.0	160	186	196	198	236	262	303
Total turnover per head of the population [a] (in zlotys at 1950 prices)	2 030	108	110	111	103	121	131	146
Incomes of workers:								
Average net monthly wage (in current zlotys)	447	121	132	144	204	216	224	248
Cost-of-living index	100	112	..	..	232	..	228	228
Index of real wages	100	108	..	..	88	..	98	109

Sources: Fulfilment of the Six-year Economic Plan, pp. 226 and 231; direct communication from the Polish Government, and ECE estimates of the cost-of-living index.

[a] Excluding public catering.

workers and those in the construction industry. The range between the lowest and the highest wage incomes probably increased, as in consequence did general pressure for more fundamental improvements.

After the events of October 1956, more far-reaching changes were made which raised average money wages by the third quarter of this year to about 19 per cent (and average real wages some 10 or 11 per cent) above the level of twelve months earlier and benefited the lower-paid workers especially. But even after these increases the situation of consumers is not easy. To maintain a family on slightly more than a bare subsistence standard an income of about 600 zlotys per adult member of the family per month [41] is needed, so that a family of two adults and two children would need some 1,800 to 2,000 zlotys.

However, statistics of wages for 1956 show that the share of employees earning more than 2,000 zlotys per month was only 6.4 per cent of the total. Thus, to maintain a family adequately more than one wage is usually necessary, and if this is unobtainable by legal means a family is left with the choice between misery and seeking illegal income.

Housing

As can be seen from examples given in Appendix Table VI, average per capita consumption of most foods and the basic manufactured consumers' goods has been rising since 1954, but in many instances absolute standards remain very low. This is even more true of housing.

Scarcity of building materials and capacity, together with rapid population growth, has meant that housing standards deteriorated up to 1956. The number of persons per room increased, and the condition of the older dwellings worsened as a result of inadequate repair and maintenance.

	Towns		*Countryside*	
	1950	*1956*	*1950*	*1956*
Population, in millions	9.4	11.8	15.2	15.7
Millions of rooms [a]	6.0	6.8	7.7	7.7
Persons per room	1.57	1.74	1.98	2.04

Source: Zasoby mieszkaniowe budownictwo w latach 1946-1955; Housing Institute, Warsaw, May 1957.

[a] Allowing for an annual loss of ½ per cent of the dwelling stock from age fire, etc.

The main objective of the housing programme up to this time was to provide adequate living-space in the areas where industrial workers were needed, and over 90 per cent of all dwelling construction during the Six-year Plan period was carried out by the state sector. The majority of the new houses are built in settlements well equipped with social and cultural amenities, but this concentration of housing construction has been particularly harmful to the development of small towns and of rural housing. In view of the

[41] See *Przegląd Zagadnień Socjalnych*, No. 2, Warsaw, 1957.

shortage of building materials, private construction was discouraged, and the suppression of small-scale production of building materials out of local resources and the migration of building workers further limited building possibilities in the small towns.

More generous provision of materials for building outside the state sector has been made since 1956, and this should tend particularly to improve rural housing conditions. However, a far more energetic housing policy will be needed in the future — including more attention to repairs and maintenance, financed if necessary by higher rents — if the situation is not to deteriorate further. Not only social, but also economic aims call for an improvement in the supply of dwellings, the lack of which constitutes a serious hindrance to labour mobility at present.

5. Foreign Trade

The developments in the main sectors of the Polish economy described in preceding sections have been reflected in the pattern of foreign trade.

Throughout most of the last seven years, difficulties in financing an adequate import programme have been a besetting problem for Polish economic policy. Credits of $550 million, received from the Soviet Union in connexion with the trade agreements negotiated in 1948 and 1950, appeared to provide a significant supplement to Polish import possibilities; but, as was later recognized by both parties concerned, their value was in fact offset in subsequent years by deliveries of Polish coal to the Soviet Union at less than world market prices.[42]

No foreign exchange reserves have existed which could be drawn upon to finance any sudden and unforeseen worsening of the foreign trade balance, so that any failure to raise exports in line with growing import demand put the import programme in immediate jeopardy; and this was from the beginning a programme confined almost entirely to goods vitally necessary for the industrial expansion plans. Thus, the very small margin of safety in the planned foreign trade balance meant that little possibility existed of widening any bottlenecks that appeared — as a consequence, for example, of an unexpectedly slower development of output of raw materials or intermediate products than of final processing capacity — by means of emergency increases in imports of the scarce goods. It also meant that any shortfall in planned imports was liable to have disruptive effects throughout the economy.

As can be seen from Table 12, it proved possible, despite a shortfall on export targets, to import during the years 1950 to 1955 practically as great an over-all volume of goods as had been originally planned, thanks partly to some improvement in the terms of trade over the period, though they deteriorated again in 1956. Considerable success was achieved in building up exports of machinery, forest products and metals, but success in these sectors could not compensate for the much slower growth of the traditional exports — coal and coke and foodstuffs.

The stagnation of foreign trade from 1950 to 1953 is, however, striking. The depressed state of Polish agriculture, combined with a growth of coal output inadequate to maintain exports while meeting rapidly rising home requirements, prevented any rise in the total volume of the two main groups of exports; and imports, after rising in 1951, had actually to be reduced in the next two years. The balance-of-payments difficulties of this period contributed to the depression of consumers' living standards, particularly in 1953. In that year the near exhaustion of earlier lines of credit and the start of repayments forced the Government to cut back imports, at the expense of food and consumers' goods especially, and to force out more exports in all categories.

The effects of the change of policy in 1954 — in the direction of a greater attention to improving living standards and a stabilization of the level of investment — is reflected in the subsequent changes in the trade pattern. The 1953 rise in net exports of foodstuffs was first reversed and then, by last year, had become a net import surplus which has continued into 1957. The share of machinery and coal in total exports has considerably increased, and the net import surplus of machinery and equipment been greatly reduced, while imports of manufactured consumers' goods have also risen.

The very rapid growth of consumption between 1956 and 1957, already described, has brought about a sudden rise in import needs, a levelling-off of exports and a large trade deficit this year:

	1955	*1956*	*First half 1956*	*First half 1957*
	(Millions of current dollars)			
Imports	932	1022	513	587
Exports	920	985	468	468
Trade balance . . .	−12	−37	−45	−119

Source: Direct communication from the Polish Government.

[42] In November 1956, all outstanding debts ($525 million) due from Poland to the Soviet Union were cancelled by mutual agreement to consider them as having been repaid by past exports of Polish coal.

TABLE 12

Polish foreign trade, 1950 to 1955

	1950 Actual	1951 Actual	1952 Actual	1953 Actual	1954 Actual	1955 Actual	1950–1955 Plan	1950–1955 Actual	1956 Plan	1956 Actual	1957 Plan	1960 Plan Index: (1955 = 100)
	Millions of dollars at 1955 prices											
Imports	705	801	775	771	901	932	*4 941*	4 885	*931*	912	*1 140*	*127*
of which :												
Machinery and equipment	217	313	310	319	294	288	*1 698*	1 741	*261*	230	*227*	*78*
Raw materials and industrial goods	388	384	353	384	460	482	*2 613*	2 451	..	498	*610*	*165*
of which :												
Fuel	17	23	26	28	37	44	*197*	175	..	..	..	*226*
Raw materials for heavy industry	129	117	131	152	188	190	*1 019*	907	..	.. [a]	..	*184*
Raw materials for light industry	219	211	170	173	204	221	*1 240*	1 198	..	.. [b]	..	*133*
Supplies to agriculture	23	33	26	31	32	27	*157*	172	..	..	..	*200*
Food	65	61	81	48	117	121	*375*	493	*130*	127	*183*	*125*
Manufactured consumers' goods	35	43	31	20	30	41	*255*	200	*35*	59	*120*	*164*
Exports	735	691	693	785	882	920	*5 187*	4 706	*1 016*	965	*932*	*146*
of which :												
Machinery and equipment	49	51	75	102	97	120	*448*	494	*140*	134	*176*	*283*
Raw materials and industrial goods	498	476	453	478	558	590	*3 245*	3 053	*647*	628	*553*	*103*
of which :												
Coal and coke	361	342	328	329	415	428	*2 403*	2 203	..	.. [c]	..	*92*
Steel and zinc	59	59	58	68	64	73	*337*	381	..	.. [d]	..	..
Cement	6	5	5	7	6	8	*24*	37	..	..	..	..
Timber and paper	32	31	26	35	37	34	*131*	195	..	..	..	..
Food	120	115	110	142	153	143	*1 076*	783	*142*	115	*137*	*120*
Manufactured consumers' goods	68	49	55	63	74	67	*418*	376	*83*	88	*66*	*92*
Balance	+30	−110	−82	+14	−19	−12	*+246*	−179	*+85*	+53	*−208*	
of which :												
Machinery and equipment	−168	−262	−235	−217	−197	−168	*−1 250*	−1 247	*−121*	−96	*−51*	
Raw materials	+110	+92	+100	+94	+98	+108	*+632*	+602	..	+130	*−57*	
of which :												
Fuel	+344	+319	+302	+301	+378	+384	+2 206	+2 028	..	..	..	
Food	+55	+54	+29	+94	+36	+22	*+701*	+290	*+12*	−12	*−46*	
Manufactured consumers' goods	+33	+6	+24	+43	+44	+26	*+163*	+176	*+48*	+29	*−54*	
	Millions of dollars at current prices											
Imports	668	924	863	774	904	932	..	5 065	..	1 022	..	
Exports	630	761	780	831	869	920	..	4 791	..	985	..	
Balance	−38	−163	−83	+57	−35	−12	..	−274	..	−37	..	

Sources : Wykonanie zadan planu 6-letniego, Warsaw, 1956; *Trybuna Ludu*, 18 February 1957; *Zycie Warszawy*, 19 February and 19 April 1957; *Handel Zagraniczny*, Nos. 5 and 7, 1956, and as in Tabls 13.

[a] Above the plan.

[b] Below the plan.

[c] Actual was 93 per cent of the plan.

[d] Actual was 116 per cent of the plan.

But the present level and pattern of foreign trade are still not such as to permit a smooth functioning of the Polish economy, and difficulties in assuring steady supplies of imported materials and specialized equipment still prevent the full utilization of productive capacity in some industries.

To maintain even the current level of imports and of home market supplies in general has, however, obliged the Polish Government to borrow heavily from abroad. Credits received from the Soviet Union in September and November of 1956 amount to $125 million, for purchases of industrial raw materials and of 1.4 million tons of grain for the year 1957, together with a further $175 million available for purchases from the Soviet Union during 1958 to 1960 and the cancellation of outstanding debts that has already been mentioned. At the beginning of 1957, Poland received another Soviet credit to the value of $25

million. Finally, in June of this year, an agreement was reached with the United States according to which Poland received $95 million for purchasing grain, cotton and other goods during the current year.

These new credits ($420 million in total) are equivalent to rather more than one-third of this year's probable import bill and provide some margin to cover a deficit next year — though not on the 1957 scale. Some of the problems of correcting this position are discussed in the following section.

6. Future Prospects

The Immediate Future

The overriding economic problem in Poland during most of this year has been to absorb the large increases in consumers' money incomes conceded during 1956. As has already been mentioned, the average monthly wage in the third quarter of 1957 was 18½ per cent higher than a year earlier, largely as a result of the increases effected at the end of 1956, though minor adjustments have continued during this year. Aggregate wage incomes in the first eight months of the year were 21 per cent above the level of the same months of 1956 and aggregate farm incomes (gross) 42 per cent greater, reflecting substantial increases both in the volume of sales off farms and in farm prices.

Thanks to the higher deliveries from farms and large food imports, there has been very little pressure on consumers' prices for foodstuffs. But increases of about 20 per cent in textiles output since last year and of 50 per cent or more (from a very low absolute level) in production of many durable consumers' goods have not sufficed to prevent strains in the market for these products. The average urban consumer price level seems to have risen by some 6 to 8 per cent over the twelve months up to the third quarter of this year, allowing for higher charges for services and for some concealed rise in living costs resulting from the disappearance from the shops of many cheaper-quality industrial goods.

Larger supplies of building materials, fertilizers, etc., and some sales of land and state-owned equipment have helped to absorb the rise in farm incomes, but prices paid by farmers have also been substantially increased, and aggregate farm income this year in real terms is estimated at about 10 per cent above the 1956 level.

Some further increases in consumer demand in the next few months will certainly occur—for example, as a result of the " 13th month " bonus wage payment due in January. However, the good harvest, the fact that industrial output continues to rise with no significant slackening of pace and the supplement to domestic resources provided by the unspent portion of the new foreign credits all constitute factors on the side of a continuing fairly stable balance of over-all demand and resources in the immediate future if present wage rates remain substantially unchanged.

Longer-term Problems

But a situation cannot safely be allowed to continue in which, although the rate of accumulation has been virtually stable for the last three years, it is necessary to borrow heavily abroad to finance a rise in consumption; and a number of more specific economic problems still await a solution. An increase in exports is urgently needed, sufficient not merely to reduce the present dependence on foreign credits, but also to ensure a steady flow of essential imports of equipment and materials which will permit a full utilization of Polish industrial capacity; it is also at least equally vital to increase domestic output of some " bottleneck " products such as electric power; and social welfare and the need to improve labour mobility call for a much higher rate of dwelling construction and repair.

These desiderata can hardly be achieved without a speeding-up of the rate of investment in some branches; and the need is the more pressing since the virtual stabilization of the over-all rate of centrally planned investment since 1954, and the actual fall in industrial investment, have inevitably meant the postponement of some urgent projects. Moreover, unless industrial investment can be raised, the maintenance of full employment for the growing labour force may be jeopardized.

The rate of increase in new working places may well not have fallen off significantly as yet, since the relaxation of the general investment drive has enabled resources to be concentrated on the completion of projects already under construction and, in addition, there has been some switch towards quicker maturing types of investment (e.g., in the light industries). But already difficulties have occurred in finding employment for certain categories of workers, and some redundant labour in existing enterprises might be usefully employed if alternative possibilities were more easily available—though some of the apparent redundancy would disappear if supplies of energy and of materials improved.[43] There will, however, be a tangible increase in the rate at which young people enter the labour market after 1960, and to secure work for these newcomers an accelerated rate of

[43] See the *Bulletin*, Vol. 9, No. 2, pp. 25 and 26.

TABLE 13

Production and employment plans, 1955 to 1960

	1955	1957	1957	1960	Annual percentage rates of growth	
	Actual	Plan	Actual [a]	Plan	1955 to 1960 Plan	1955 to 1957 Actual [a]
Net national income (billion zlotys at 1956 prices)	231.0	266.9	276	334.7	7.7	9.3
Gross output of socialist industry	239.5	271.5	285	357.0	8.3	9.1
Of which:						
Investment goods	126.1	141.0	148	189.9	8.5	8.5
Consumers' goods	113.4	130.5	136	167.1	8.0	9.7
Gross agricultural output [b]	107.0	117.6	118	133.2	4.5	4.9
Of which:						
Gross plant production	56.6	61.7	60	69.3	4.1	3.1
Gross animal production	50.4	56.0	58	63.9	4.9	6.9
Transport and communications services	15.8	16.8	17	20.3	5.1	4.0
Employment in socialist industry (millions)	2.7	2.9	3	3.3	4.3	4.7
Gross output per head in socialist industry (thousand zlotys)	89.0	93.3	97	107.5	3.8	4.1

Source: Materialy liczbowe do projektu uchwaly o planie rozwoju gospodarczego w latach 1956-1960, Warsaw, 1957.

[a] Estimate by the ECE secretariat on the basis of data available for the first eight months of the year.

[b] Not adjusted to exclude fodder fed to animals.

investment in industry and in other sectors of the economy will be necessary.

The New Version of the 1956-1960 Plan

The new plan for 1956 to 1960 gives an indication of the general lines on which the Polish authorities intend to tackle these problems. It is based on projected increases in national income and industrial output up to 1960 at rather slower rates than were assumed in the original version of the plan [44] and also rather slower than the current rates of expansion (see Table 13). Agricultural output (gross) is expected to continue to rise at about the rate of the last two years, with plant production expanding faster than before and animal production rather more slowly.

As compared with the original version of the plan, the emphasis has shifted again in favour of accumulation. The share of accumulation in national income is expected to regain the 1955 level by 1960, and fixed investment is intended to rise steadily over the period (see Table 14).

Within the investment sector, agriculture is expected to absorb a larger share of the total, and practically

[44] The original version of the 1956-1960 plan was discussed in the SURVEY for 1956, Chapter II.

TABLE 14

Distribution of the national income, 1955 to 1960

Billions of zlotys at 1956 prices
(Percentages in italics)

	1955	1956		1957	1958	1959	1960		Index 1960 Plan
	Actual			Plan	Plan	Plan	Plan		*(1955=100)*
National income	231.0	246.9	*100*	266.9	293.4	314.1	334.7	*100*	145
Consumption	175.7	194.7	*78.2*	214.4	232.5	243.7	257.0	*76.8*	146
Personal	157.3	175.0	*70.8*	195.3	211.8	221.7	233.5	*69.8*	148
Collective	18.4	19.7	*8.0*	19.1	20.7	22.0	23.5	*7.0*	128
Accumulation	55.3	52.2	*21.1*	52.5	60.9	70.4	77.7	*23.2*	141
Investment	36.1	35.9	*14.5*	39.1	45.0	50.6	55.1	*16.5*	153
Increase in stocks	19.2	16.3	*6.6*	13.4	15.9	19.8	22.6	*6.7*	118

Source: Materialy liczbowe do projektu uchwaly o planie rozwoju gospodarczego w latach, 1956-1960, Warsaw, 1957.

TABLE 15

Planned gross fixed investment,[a] 1956 to 1960

Annual rates

	1956 Actual	1960 Plan	1956–1960 Plan	1956 Actual	1956–1960 Plan
	Billion zlotys			Percentages	
Total	50.0	71.5	59.8	100	100
Industry	21.3	26.5	23.5	42.6	39.2
Building enterprises	1.4	1.8	1.7	2.7	2.8
Agriculture	8.7	13.6	11.0	17.3	18.5
Forestry	0.2	0.4	0.3	0.4	0.5
Transport and communications	4.5	6.9	3.5	9.0	9.3
Trade	1.5	1.7	1.5	3.0	2.6
Local government	1.4	2.4	1.9	2.8	3.1
Housing	6.9	12.8	9.8	13.9	16.4
Culture and social welfare	2.6	4.7	3.7	5.3	6.1
Administration and other	1.5	0.7	0.9	3.0	1.5

Source : As for Table 14.

[a] Including investment outside the state sector.

the whole of the increase in agricultural investment between 1955 and 1960 is expected to go into private farms. Resources will be made available to provide for a rise in investment by private farmers from 2.8 billion zlotys in 1955 to 7 billion in 1960. Supplies are also to be provided for a steady increase, from 0.5 billion zlotys in 1955 to 3.2 billion by 1960, in the other main sector of private investment — urban housing — to be supplemented by higher state dwelling construction also. The rise in the share in total investment of agriculture, housing and social welfare services is in fact a striking feature of the 1956-1960 plan, and the share of industrial investment is correspondingly reduced (see Table 15). This also represents a marked change from the original version of the plan.

The distribution of industrial investment illustrates the efforts to be made to enlarge the " bottleneck " sectors, and the share of investments going to coal mining, electric power and building materials is to be greatly increased. The light industries are more or less to maintain their share of investment resources, while the share of the two sectors most favoured in the 1950-1956 Plan — metallurgy and engineering — is to fall significantly (see Table 16).

In the early years, emphasis is on the completion of investment projects already started and on extension and modernization of existing plants. But, in the last two years, the plan provides for investment in new plants to absorb the more rapid inflow to the industrial labour force after 1960. The plan already foresees a need to raise investment directed to this objective if additional resources should become available.

The plan provides for a more rapid growth of the volume of exports (46 per cent) than of imports (27 per cent) from 1955 to 1960. The changed pattern of domestic investment and increasing domestic production of machinery is reflected in estimates of a marked fall in machinery imports and of a rise in exports of machinery to nearly three times the 1955 volume by 1960. Indeed, the over-all export plan depends heavily on the expansion of this sector. It is noticeable that no reliance is placed on being able even to maintain coal exports at the 1955 rate, in view of the expected rise in home consumption, and the 20 per cent rise planned in food exports is relatively modest (see Table 12).

One question raised by this trade programme is whether a rational decision as to what level of foreign trade should be sought, or rational plans for the expansion of exports of highly manufactured goods on the scale foreseen, can be made without a reform of the domestic price structure. During the years of the most intense investment drive in the early 1950s, investment was financed and consumption squeezed partly by raising prices of consumers' goods while prices of producers' goods were held artificially low. The effects can be seen in the following estimates of national expenditure in 1955, valued at prices prevailing at the beginning and at the end of the six-year plan period (in billions of zlotys):

	In 1950 [a] prices	*In 1955 prices*	*Price index*
National income	146.9	214.4	146
Personal consumption	88.5	147.4	167
Collective consumption	12.5	17.8	142
Fixed investment	12.5	33.2	106
Increase in stocks	14.7	16.0	109

Source : Direct communication from the Polish Government.

[a] The differences between these figures and those in Table 1 are explained in the Appendix.

The distortions that have been introduced into the domestic price structure are such that it is practically impossible to judge the relative costs of different types of highly manufactured domestic products or to compare domestic production costs with import costs, so as to determine economic lines of specialization in foreign trade with either eastern or western countries.[45]

If Poland could obtain long-term capital imports to ease the balance-of-payments strains over the next few years, the task of making other necessary adjustments in the economy would of course be simplified. The interest of other European countries in the expansion of Polish coal production has already been

[45] There is evidence of a growing awareness among the member countries of the Council for Mutual Economic Assistance of the need for a more rational international division of labour which will have to be based on the establishment of more economic price structures within the member countries.

TABLE 16

Centrally planned investment in industry

	1955 Actual	1956 Actual	1960 Plan	1956–1960 Plan (annual rate)
Total (in billions of zlotys at 1956 prices)	19.4	19.8	24.9	22.0
Percentage distribution:				
Coal mining	18.2	22.3	23.5	22.6
Oil	2.8	3.8	3.0	3.3
Electric power	12.2	13.2	15.4	14.3
Metallurgy	25.3	21.3	14.3	17.0
Engineering	9.1	7.9	6.4	6.9
Chemicals	13.7	13.9	13.6	13.8
Building materials	3.8	4.0	7.3	6.6
Wood	4.3	4.4	5.2	4.9
Food processing	5.2	4.4	5.0	4.9
Other light industries	5.4	4.8	6.3	5.7

Source: As for Table 14.

recognized in the agreements recently concluded for investment by Czechoslovakia and eastern Germany in Polish coal mines,[46] and it may be that further possibilities of this kind will emerge from negotiations now in progress in various western countries.

The most fundamental question arising from the new plan, however, is whether the consumption trends that are envisaged over the next three years can be regarded as realistic. Total personal consumption is planned to rise by 1960 to nearly 50 per cent above the 1955 level; and estimated retail trade turnover (rising by nearly 70 per cent at current prices) and output of manufactured consumers' goods (rising by 47 per cent) are in line with this target. The corresponding estimates of changes in per capita agricultural incomes and real wages by 1960 show increases of 30 per cent and 23 per cent respectively above the 1955 level, and it has been officially stated that these are the priority targets of the plan. However, something like 20 per cent out of the planned 23 per cent rise in per capita real wages over the plan period has already taken place; and it may be doubted whether wage-earners will in fact be satisfied with a mere 3 or 4 per cent further advance over the next three years, and whether an average increase of these proportions would provide a sufficient margin for the normal rises in piece-rate earnings that accompany growing productivity and for the adjustments of relative wages that are bound to be necessary from time to time.

In the immediate future it is clear that no significant further rise in real personal incomes can safely be conceded in view of the serious balance-of-payments position. The possibility of raising living standards significantly in, say, 1959 or 1960, without either again precipitating a balance-of-payments crisis or sacrificing investment and the possibility of rapid expansion in the longer term, depends on whether the existing " reserves " in the economy can be mobilized to produce higher levels of over-all output than are assumed in the plan.

Present policies towards agriculture, including higher farm prices, better supplies of goods — including investment means — to farmers, the end of discrimination against the individual farmer, and the decision to regard collectivization as a long-term goal, have already brought good results. The possibilities now existing for increasing the size of individual farms, and the encouragement of voluntary co-operative farming of various kinds, should help to provide the conditions in which the increasing supplies of machinery and growing technological knowledge can be economically applied. However, the measure that would probably bring the greatest immediate returns in peasant goodwill would be the complete abolition of compulsory deliveries, which the Government has already stated as its aim, though to devise some alternative method of taxing agricultural income would itself raise problems.[47]

In industry, " reserves " exist in two main forms. First there is labour and capacity that could be more fully employed if only adequate supplies of electric power and of raw materials could be assured; but fully to utilize these reserves depends, *inter alia*, on a solution to the balance-of-payments problem and on expanding investment in " bottleneck " sectors of the economy. However, a certain amount can be done to increase supplies of consumers' goods without greatly raising demands for imported raw materials by making more locally produced resources available for handicraft production. Already this is being done, and 32,000 new handicraft enterprises were established — mainly in the services and building materials sectors — between October 1956 and June 1957. But the extent to which handicraft production can be developed without wasting materials or creating new problems of adjustment in the not very distant future is of course limited.

The second chance of increasing output without a significant increase in imported inputs lies in the possibilities that exist of bringing into the normal production process the effort that at present goes into private work carried on during absenteeism from the worker's usual job (sometimes using illegally acquired materials), of reducing losses which occur through such factors as waste of materials and under-maintenance of machines, and of improving the efficiency of management of enterprises and of the organization of

[46] See " Current Economic Developments in Europe ", section 4 in this issue of the *Bulletin*. This investment is additional to the plan covered in Tables 15 and 16.

[47] See the SURVEY for 1956, Chapter I, section 4.

production at all levels. The discussions which took place at the end of last year and early in 1957 on the devolution of responsibility to workers' councils and to directors of enterprises, and the start made in setting up " experimenting enterprises " to try out new ideas on such matters as production planning, management and inter-enterprise trading, were described in Chapter I of the 1956 SURVEY. The reforms then contemplated do not seem yet to have been carried very far, though a drive to improve the average level of managerial qualifications and ability, followed by a real devolution of responsibility to the enterprise level, could very probably bring returns in the form of improved morale throughout industry and more efficient production.

But, in addition, it is probably essential that the industrial workers should have some assurance that they will share in the benefits of any further increases in over-all productivity and output. Pressing as the claims of a higher rate of investment undoubtedly are, there is a real danger that any attempt once more to hold the average real incomes of industrial workers practically constant would be self-defeating through the adverse effects on workers' morale and on productivity.

APPENDIX

Sources and methods of calculation of Table 1: National Income of Poland, 1949 to 1955

National income in all the years concerned and its distribution among end uses has been calculated by Polish official sources, and communicated to the secretariat. Personal consumption, as given in this series, has been adjusted downwards by 10 per cent in 1953 and by 9 per cent in 1955 in accordance with observations in Source **2**, p. 24, and in **4**, p. 6, and in line with other statistical series related to consumption. The deduction made from personal consumption diminishes the totals of national income in the two years by 4.7 per cent and 5.5 per cent, respectively.

National income according to sectors of origin in 1949 is taken from **1**, p. 231. It is assumed that 1950 prices as given in **1** correspond to 1950 prices given in the Polish Government's communication and in **2**, p. 24. Net value of agricultural output of that year is increased by 6 per cent, in agreement with a later computation given in **3**, p. 84. By the same token, the total of national income and its structure by origin is slightly modified.

Planned national income and its break-down by origin and distribution among end-uses is based on data given in **1**, p. 251.

Net output in branches of the economy in years following 1949 is obtained by inflating 1949 values with those statistical series which are believed to be the best available indicators of the development of net output. National income generated in industry in 1949 is inflated by the rate of increase in the total industrial consumption of electric power (see Appendix Table I). The results obtained for 1955 are in accord with findings in **4**. Net output of agriculture in 1949 is multiplied by an index based on gross agricultural production, diminished by the value of fodder. Building and construction is inflated by an index of gross investment in housing, other building and construction activities; transport and communication by an index of volume of goods transported by railways; and trade by an index of value of retail sales. The item " other " is a residual. It includes the foreign balance, errors and omissions and any differences due to changes in method of computation of national income which intervened between 1949 and 1955.

Sources :

1. *Szczegółowy 6-Letni Plan Rozwoju Gospodarczego i Budowy Podstaw Socjalizmu na lata 1950-1955*, Tom I, Państwowa Komisja Planowania Gospodarczego; Warsaw, August 1950.
2. *Dochód Narodowy Polski 1954 i 1955*, Central Statistical Office, Warsaw, June 1957.
3. *Wykonanie zadań planu 6-letniego; Ważniejsze wskaźniki*, Central Statistical Office, Warsaw, 1956.
4. L. Zienkowski: "Jak oblicza sie Dochód Narodowy ", a chapter of a book to be published soon, received from the Central Statistical Office of Poland.

Appendix Table I

Consumption of power, employment and gross output of Polish industry, 1949 to 1955

A — Consumption of electric power in millions of kWh
B — Total employment in thousand persons
C — Gross value of production in million zl. 1938 prices

		1949		1950		1951		1952		1953		1954		1955	
All industry	A[a]	5 718	100	6 495	116	7 030	125	7 893	141	9 219	164	10 214	182	12 009	210
	B	1 736	100	2 039	117	2 213	127	2 323	134	2 473	142	2 580	149	2 696	155
	C	17 925	100	22 926	128	27 999	156	33 305	186	39 112	218	43 558	243	48 400	270
Electric power plants	B	52	100	58	111	58	111	56	108	58	110	59	113	59	114
	C	830	100	940	113	1 012	122	1 180	142	1 328	160	1 533	185	1 856	224
Mining	A[b]	(2 072)	100	2 180	105	2 194	106	2 294	111	2 336	113	2 436	118	2 743	132
	B	258	100	272	105	288	112	285	110	298	115	319	123	339	131
	C	1 307	100	1 388	106	1 461	112	1 511	116	1 534	117	1 575	121	1 706	130
Building materials	A[c]	(200)	100	244	122	264	132	280	140	299	150	351	175	367	183
	B	122	100	146	119	152	124	159	130	177	145	193	158	199	163
	C	692	100	946	137	1 228	177	1 428	206	1 633	236	1 761	254	1 924	278
Metallurgy	A	(895)	100	1 048	117	1 082	121	1 335	149	1 849	206	2 278	254	2 819	315
	B	102	100	109	107	113	111	119	117	139	137	149	147	174	172
	C	1 791	100	2 024	113	2 189	122	2 592	145	3 333	186	3 736	209	4 494	251
Engineering and metal manufacturing	A	(230)	100	261	113	347	151	459	199	664	289	726	316	823	358
	B	287	100	350	122	411	143	469	163	525	183	550	192	525	183
	C	2 339	100	2 732	117	3 965	170	5 918	253	7 868	334	9 478	405	9 841	421
Electrical equipment	A	(25)	100	30	123	41	167	47	188	56	226	74	301	89	358
	B	39	100	50	130	55	141	63	162	72	185	78	199	74	190
	C	474	100	693	146	1 145	242	1 556	328	1 673	353	1 678	354	1 742	367
Chemicals	A	(964)	100	1 129	117	1 260	131	1 311	136	1 664	173	1 916	199	2 347	243
	B	106	100	130	122	143	135	155	146	157	148	157	148	183	172
	C	2 193	100	2 831	129	3 415	156	4 276	195	4 544	207	5 371	245	6 746	308
Textiles	A	(418)	100	436	104	465	111	503	120	495	118	553	132	598	143
	B	331	100	348	105	348	105	338	102	337	102	337	102	364	110
	C	2 221	100	2 368	107	2 870	129	3 174	143	3 825	172	3 973	179	4 529	204
Paper	A	(310)	100	344	111	386	124	425	137	446	144	490	158	546	176
	B	38	100	41	108	44	115	46	119	41	108	45	117	47	123
	C	442	100	546	124	669	151	680	154	705	160	762	172	871	197
Timber	A	(25)	100	30	122	35	142	46	188	60	244	68	277	84	342
	B	96	100	120	125	126	131	137	143	147	153	148	154	155	160
	C	546	100	730	134	1 007	185	1 323	242	1 689	309	1 843	338	1 911	350
Food processing	A	..		..		..		..		..		..		..	
	B	175	100	220	125	247	141	268	153	294	168	311	177	319	182
	C	4 189	100	6 296	150	7 017	168	7 557	180	8 512	203	9 136	218	9 599	229

Sources: For A, direct communication from the Polish Government. For B and C, *Statystyka Przmyslu*, Warsaw, 1956.

[a] Including building and construction.
[b] Coal mining only.
[c] Cement industry only.

Appendix Table II

Annual increases in productive capacity in Polish industry, 1949 to 1955

	Unit	1950	1951	1952	1953	1954	1955	1950–1955	
								Total	Increase as percentage of 1949
Hard coal	Million tons/year	3.9	4.0	2.4	4.3	2.9	2.9	20.4	*28*
Coke		0.1	1.3	0.5	—	0.8	1.2	3.9	*68* [a]
Electric power	MW	85	157	283	347	296	333	1 501	*57*
Iron ore	Thousand tons/year	90	83	109	279	255	278	1 093	*160* [a]
Copper ore		660	—	46	400	100	25	1 231	[b]
Zinc and lead ore		430	113	238	33	250	175	1 239	*108* [c]
Pig iron	Million tons/year	0.1	0.3	0.1	0.8	0.4	0.4	2.1	*151* [a]
Crude steel		0.3	0.5	0.4	0.3	0.2	0.7	2.4	*104* [a]
Volume of blast furnaces	m^3/year	—	769	—	2 493	1 030	1 030	5 322	*75*
Volume of open-hearth furnaces	Tons/year	300	550	225	220	20	1 025	2 340	*77*
Rolling capacity per shift	Thousand tons/year	40	60	40	60	70	50	320	*41*
Rolled products		117	100	1 092	170	25	1 693	3 197	*188* [a]
Copper		2.2	17.4	15.1	—	18.4	27.0	70.1	*865* [a]
Zinc		9.9	5.3	9.0	—	20.0	54.0	98.1	*91* [a]
Aluminium		—	—	—	—	0.4	20.2	20.6	[b]
Metal-working revolving machine tools	Number/year	604	1 178	96	1 053	1 413	884	5 228	*137* [d]
Electric revolving machines	MW/year	140	226	170	174	299	283	1 293	*511* [c]
Roller bearings	Tons/year	500	500	300	700	530	1 570	4 100	[b]
Agricultural machinery	Million zl/year [e]	7.0	11.1	8.0	16.6	31.6	41.7	116.0	*258* [a]
Lorries	Number/year	780	13 720	2 500	3 000	1 500	1 000	22 500	*9 000* [a]
Motor-cycles	Thousand/year	—	—	12.0	1.7	8.3	5.0	27.0	*643* [a]
Synthetic ammonia	Tons/day	5	25	30	60	147	183	450	*294*
Sulphuric acid (technical)	Thousand tons/year	—	50.0	51.5	31.4	21.7	21.9	176.5	*64* [a]
Crude soda	Tons/day	55	85	155	225	35	15	570	*98*
Calcined soda	Thousand tons/year	17.1	22.3	12.5	26.5	28.1	20.5	127.0	*91* [a]
Caustic soda		6.8	7.2	1.4	14.1	9.8	9.0	48.3	*86* [a]
Nitrogenous fertilizers (in terms of N_2)		5	—	—	5	15	55	80.0	*107*
Phosphorous fertilizers (in terms of P_2O_5)		8.5	9.7	6.6	16.0	20.3	9.7	70.8	*83*
Cement		240	89	364	175	317	350	1 535	*65* [a]
Lime		—	—	—	4.0	30.5	51.2	85.7	*11* [a]
Bricks	Million ceramic units/year	—	—	39.4	74.8	55.6	27.1	196.9	*20* [a]
Plate glass	Thousand tons/year	—	—	—	—	—	13.4	13.4	*17* [a]
Paper		—	12.0	1.5	22.0	47.7	6.3	89.5	*34* [a]
Cellulose		4.0	19.6	6.2	13.4	17.0	—	60.2	*48* [a]
Cotton spindles	Thousand	1 410 [f]	..	..	..	..	1 760 [g]	350	*25*
Cotton looms		37 [f]	..	..	..	..	38 [g]	1	*3*
Woollen spindles		484 [f]	..	..	..	..	509 [g]	23	*5*
Woollen looms		6.3 [f]	..	..	..	..	5.8 [g]	−0.5	*−8*
Tinned meat and fish	Thousand tons/year	—	1.3	0.4	1.4	—	—	3.1	*20* [a]
Beer	Thousand hl/year	—	170	—	—	290	45	505	*21* [a]
Tobacco	Thousand tons/year	1.5	5.6	0.3	4.8	4.2	2.8	19.2	*110* [a]

Sources: Fulfilment of the Six-year Economic Plan, Warsaw, 1956; and direct communication from the Polish Government.

[a] Assuming actual output in 1949 was equivalent to productive capacity.

[b] Production non-existent in 1949.

[c] Increase in output during 1949-1955 as percentage of the 1949 output.

[d] Increase over 1950.

[e] 1938 prices.

[f] Stock at the end of 1949.

[g] Stock at the end of the year.

Appendix Table III

Output of selected goods produced by socialized industry in Poland

Commodity	Unit	1949	1950	1953	1954	1955	Index 1955 1949 = 100	Index 1955 Original Plan = 100	1956	1960 Plan	1960 Index 1955 = 100
Metallurgy											
Iron ore	Million tons	0.7	0.8	1.3	1.6	1.8	271	62	1.8	2.8	156
Pig iron		1.4	1.5	2.4	2.7	3.1	224	89	3.5	5.1	165
Crude steel		2.3	2.5	3.6	3.9	4.4	192	97	5.0	7.0	158
Rolled products		1.6	1.8	2.6	2.7	3.0	190	95	3.3	4.6	159
Zinc and lead ores		1.1	1.3	2.0	2.3	2.4	208	107	2.2	2.5	106
Copper ore		—	0.1	0.7	0.9	1.0	..	31	1.2	2.1	204
Zinc		0.1	0.1	0.1	0.1	0.2	144	79	0.2	0.2	112
Electrolitic copper	Thousand tons	8	11	13	17	16	204	63	20	20	128
Lead		22	22	30	32	34	159	89	35	40	117
Fuels											
Hard coal	Million tons	74.1	78.0	88.7	91.6	94.5	128	95	95.1	105.0	111
Brown coal		4.6	4.8	5.6	5.9	6.0	130	71	6.2	11.9	196
Petroleum		0.2	0.2	0.2	0.2	0.2	119	46	0.2	0.2	95
Coke		5.8	6.0	7.9	8.5	10.0	174	101	10.5	11.8	118
Natural gas	Billion m³	0.1	0.2	0.3	0.4	0.4	290	82	0.4	0.4	102
Electric power	Billion kWh	8.3	9.4	13.7	15.5	17.8	214	92	19.5	28.3	159
Engineering											
Tubular steam boilers [a]	Thousand tons steam/hour	—	—	1.8	1.7	2.0	..	66	1.8	3.4	169
Electric revolving machinery	Thousand	51	77	158	176	201	393	110	261	740	370
Metal-working machine tools:											
Revolving machines	Thousand	—	3.8	8.7	11.0	12.7	..	..	12.3	16.5	130
Pressing machines		—	0.3	1.3	1.5	1.7	..	..	1.7	2.4	132
Building materials machinery	Thousand tons	2.0	2.1	4.0	5.3	7.7	385	110	2.3	15.0	195
Chemical materials machinery		4.0	7.1	30.0	35.3	31.9	798	161	..	46.9	147
Paper-making machinery		0.3	1.1	1.5	1.6	1.5	482	31	2.0	3.5	230
Textile machinery		3.4	5.2	3.7	5.6	6.0	179	44	5.3	9.4	156
Food-processing machinery		1.4	1.6	10.0	11.8	9.8	700	109	10.5	22.9	234
Agricultural machinery	Million zlotys [b]	45.0	48.4	93.4	150.3	194.3	432	111	233.2	423.6	218
Building and construction machinery	Thousand tons	0.8	4.7	20.6	21.0	27.8	3 475	169	324	57.2	212
Passenger cars, "Warsrawa"	Thousand	—	—	1.6	1.7	4.0	..	34	6.1	29.0	722
Lorries		0.2	0.8	10.9	12.6	12.5	5 094	50	12.9	13.6	109
Tractors		2.5	4.0	6.9	7.7	7.7	305	70	8.5	3.0	39
Electric locomotives	Number	—	—	1	7	7	..	28	1	48	686
Railway coaches		194	158	511	463	561	289	89	516	600	107
Railway trucks	Thousand	16.1	13.9	8.8	11.2	11.9	74	77	12.3	16.0	132
Sea-going ships	Thousand DWT	12.3	17.3	65.5	88.7	110.3	897	77	120	224	198
Motor-cycles	Thousand	4.2	14.8	13.7	19.8	30.1	717	94	45.5	190.0	630
Roller bearings	Millions	—	0.4	2.1	2.6	3.3	..	55	4.3	14.0	425
Radio sets	Thousand	66	116	268	308	461	698	154	497	950	206
Chemicals											
Sulphuric acid (100%)	Thousand tons	276	285	370	419	450	163	83	481	723	161
Calcined soda		140	162	205	212	228	163	59	232	530	232
Caustic soda		56	65	82	88	102	180	63	123	177	173
Carbide		154	172	185	181	211	137	76	213	335	159
Nitrogenous fertilizers (in pure content)		74	78	84	100	154	209	67	175	298	194
Phosphorous fertilizers (in pure content)		74	83	109	121	132	179	53	124	229	174
Crude benzol		71	75	95	105	125	175	90	..	..	..
Dyes		3.8	4.3	6.1	6.4	6.6	176	84	6.8	8.0	121
Artificial fibres		13.0	14.5	25.4	31.1	35.0	268	62	39.0	49.0	140
Tyres		6.5	8.4	15.7	18.9	19.5	300	65	23.7	56.5	290
Pharmaceutical industry	Billion zlotys [b]	0.1	0.2	0.4	0.6	0.8	1 211	166	1.0	1.9	235
Building materials											
Cement	Million tons	2.3	2.5	3.3	3.4	3.8	163	77	4.0	6.9	180
Lime		0.8	0.9	1.2	1.3	1.3	171	81	1.2	1.6	123
Bricks—baked	Billion	1.0	1.1	2.2	2.5	2.6	260	68	2.5	3.6	140
Lime-sand bricks	Million	26	42	104	126	150	57	44	162	306	204
Total Glass	Thousand tons	157	207	269	284	305	194	107	..	..	..
Window glass (in terms of 2mm glass)	Million m²	10.7	12.3	15.7	15.8	16.1	151	107	19.8	28.0	174
Wood and paper											
Sawnwood	Million m³	4.1	4.2	5.7	6.1	6.3	155	157	6.2	6.3	100
Cellulose	Thousand tons	125	130	180	190	214	179	52	222	306	143
Paper		265	292	356	366	402	152	76	..	508	126
Cardboard		47.6	55.4	77.4	79.7	84.7	178	89	..	143	
Textiles											
Cotton cloth	Million metres	402	433	498	524	563	140	93	558	664	118
Woollen cloth		49	56	71	71	76	153	101	77	86	113
Silk cloth [c]		45	53	68	75	81	180	78	85	101	124
Flax cloth		40	50	43	39	42	106	56	53	92	219
Knitted wear	Thousand tons	5.4	7.3	10.2	10.2	11.3	212	78	..	14.1	125
Clothing and shoes											
All cloth made-up	Million metres	119	164	210	203	203	170	57	..	..	..
Shoes	Million pairs	18.8	28.6	50.3	51.5	54.9	293	120	60.4	83.3	152
Food processing											
Meat	Thousand tons	458	636	627	617	629	137	66	765	947	151
Bacon		24	40	58	57	53	225	76	52	50	95
Milk, powdered		0.3	0.6	3.6	3.9	4.2	1 470	47	4.9	8.6	205
Vegetable oils and fats		30.3	37.6	42.6	46.7	52.7	174	72	55.3	80.0	152
Sugar [d]	Million tons	0.7	1.0	1.1	1.0	1.0	132	89	0.8	1.3	127
Beer	Million hectolitres	2.4	3.4	5.0	5.2	5.2	213	86	5.2	6.0	117
Crude alcohol (100%)	Million litres	86	82	125	138	115	134	54	88	132	115
Cigarettes	Billion	21.3	25.3	32.5	32.5	37.5	176	125	41.3	50.0	133

Sources: Fulfilment of the Six-year Economic Plan, Warsaw, 1956; and *Materialy liczbowe do projektu uchwaly o planie rozwoju gospodarczego w latach 1956-1960*, Warsaw, 1957.

[a] Without ships' boilers. [b] 1938 prices. [c] Including artificial fibre. [d] In terms of white sugar.

Appendix Table IV

Area harvested, yields and crops, 1949 to 1956

Area in thousands of hectares ; yields in quintals per hectare ; crops in thousands of tons ; years or yearly averages

Commodity	1949–1950			1951–1955			1955						1956		
							Actual			Original plan = 100					
	Area	Yields	Crops	Area	Yields	Crops	Area	Yields	Crops	Area	Yields	Crops	Area	Yields	Crops
Wheat	1 463	12.4	1 809	1 500	13.1	1 958	1 431	14.9	2 134	87	88	76	1 464	14.5	2 121
Rye	5 123	12.8	6 524	4 897	12.2	5 990	4 952	14.1	7 003	111	91	102	4 964	13.2	6 558
Barley	838	12.4	1 038	836	13.4	1 117	822	15.1	1 239	72	89	63	777	14.6	1 131
Oats	1 737	12.8	2 216	1 661	13.0	2 158	1 641	13.9	2 287	93	87	81	1 595	14.2	2 259
Pulses: for food	98	10.7	105	104	9.8	101	102	12.4	126	66	95	62	103	..	..
for fodder	445	10.3	459	511	8.9	452	483	10.4	503	86	83	72	418	..	..
Sugar beet	274	203	5 583	361	181	6 528	392	186	7 286	121	78	93	364	177	6 428
Oleagineous seeds	143	7.1	100	201	6.3	127	204	8.9	181	96	77	74	157	..	..
Flax and hemp	131	..	..	140	..	..	139	..	..	66	..	..	152	..	..
for straw	..	25.5	329	..	22.6	314	..	24.5	341	..	77	51	..	..	..
for seeds	..	5.1	64	..	4.4	61	..	4.6	64	..	92	61	..	..	..
Potatoes	2 577	131	33 705	2 628	113	29 781	2 702	100	27 021	102	67	68	2 714	140	38 052

Sources : Statistical Yearbook 1956, p. 131 *et seq.*; *Six-year Economic Plan 1950 to 1955*, Vol. 1, Warsaw, 1950, pp. 89, 92 and 94; *Fulfilment of the Six-year Plan*, Warsaw, 1956, p. 89 *et seq.*, and direct communication from the Polish Government.

Appendix Table V

Number of machines per thousand hectares of arable land

	State farms		Co-operative farms [b] [c]		Individual farms		
	1950 December	1956 December	1956 September		1950 December	1956 December	1957 April [c]
Fertilizer spreading machines	4.7	5.7	0.9	Fertilizer spreading machines	1.3	1.9	1.7
Grain sowing machines	7.5	7.0	5.0	Grain sowing machines	15.5	17.6	16.0
Grain combines	—	1.3	0.4	Harvester binders	9.2	8.4	7.6
				Harvesters	7.3	7.2	6.4
Binders	8.3	4.6	9.5	Binders	1.9	1.2	1.2
Threshing machines	4.8	3.4	3.2	Threshing machines	40.5	36.9	33.2
Tractor mowers	—	1.8	2.5	Mowers	9.7	8.7	8.1
Internal combustion engines	1.3	1.5	1.5	Internal combustion engines	2.0	1.9	1.7
Electric motors	10.1	18.6	1.2	Electric motors	9.9	9.4	8.5
Tractor potato diggers	2.0	2.4	3.1	Potato diggers	11.7	13.9	12.4
Potato planters	0.2	1.9	3.6	Horse-driven engines	47.0	50.1	45.1
Trucks	0.5	1.0	0.7	Horse-drawn rakes	..	11.2	10.1
Tractors (15 h.p.)	11.8	16.4	17.4				

Sources : Panstwowe Gospodarstwa Rolne w 1955 roku oraz w latach 1950-1956, Warsaw, 1957; *Panstwowe i gminne Osrodki Maszynowe, 1949-1955*, Warsaw, 1956; *Zycie Gospodarcze, No. 32, 1957 ;* and direct communication from the Polish Government.

[a] Areas of arable land for state and co-operative farms are as follows (in thousands of ha):

	1950	1956
State farms	1 507	2 022
Co-operative farms		1 590

NOTE. — Similar definitions in the two sections of the table do not always cover the same types of machinery. Machines in the private sector are smaller and of less technically advanced types.

[b] Co-operative land is compared with machinery belonging to MTS. This machinery represents an overwhelming share of all machinery used on co-operative farms.

[c] The large-scale dissolution of co-operative farms at the end of 1956 has meant that, at the present time, the ratio of machinery in the MTS to land under co-operative farming is higher, but also that the MTS are now working more for individual farmers than they did in the past.

Appendix Table VI

Per capita annual consumption of selected goods

Commodity	Unit	1949	1950	1952	1953	1955	1956 [a]
Grain products	Kg	163.3	165.8	160.5	160.3	170.7	152.9
Meat and animal fats [b]		28.7	38.2	32.9	35.5	39.0	43.0
Of which: pork fat		4.3	6.2	5.2	5.5	6.1	6.8
Milk and products (in milk equivalent)	Litres	278.7	292.5	313.4	310.9	331.9	340.4
Of which: butter	Kg	2.7	3.3	4.0	4.0	4.8	. .
Eggs	Number	116	116	130	125	137	130
Sea fish	Kg	2.1	2.0	3.5	3.3	4.3	4.7
Of which: herrings		1.8	1.3	1.1	1.6	2.2	2.6
Vegetable oils and fats		1.3	1.7	1.9	1.8	1.9	1.9
Sugar		19.3	21.0	22.4	19.9	24.0	25.2
Beer	Litres	10.4	13.9	16.4	19.0	18.9	18.7
Vodka (in terms of alcohol 100%)		1.9	2.3	2.2	2.1	2.3	2.4
Wine		0.6	0.9	1.5	1.7	2.5	2.9
Cigarettes	Number	893	1 063	1 169	1 204	1 378	1 471
Cotton cloth	Metres	13.3	14.6	15.9	15.3	16.5	17.8
Woollen cloth		1.8	2.1	2.3	2.3	2.5	2.7
Silk cloth [c]		1.8	1.9	2.6	2.2	2.8	2.9
Shoes [d]	Pairs	0.5	0.6	0.8	0.8	0.9	1.0
Paper	Kg	9.8	11.1	11.6	10.9	12.9	13.7
Soap		1.7	1.9	1.9	1.8	2.1	2.3
Washing powder		1.3	2.0	2.1	1.9	3.2	3.5

Source: Direct communication from the Polish Government.

[a] Provisional.

[b] Excluding horse meat, poultry and game.

[c] Including artificial fibre.

[d] Excluding private handicraft production.

REGIONAL ECONOMIC POLICY IN THE SOVIET UNION: THE CASE OF CENTRAL ASIA

1. Introduction

Recent steps towards the decentralization of economic planning and management in the Soviet Union have given added interest to the study of regional economic development, and the purpose of the present article is to examine the progress and problems of such development in the central Asian Soviet Republics — Uzbekistan, Kirgizia, Tadzhikistan and Turkmenia. Their geographical isolation and their historical, economic and cultural dissimilarity to the European parts of the Soviet Union provide aspects of particular interest.

Regional study of the Soviet Union has been facilitated during the past year by the publication of some statistics for individual republics, and even smaller areas, supplementing those existing for the Soviet Union as a whole. Despite these recent improvements, the available statistical material still presents such serious gaps that many significant questions have, for the present, to remain unanswered.[1]

The Historical Background

A vast desert, uninterrupted between the Caspian Sea and the Chinese frontier, isolates the central Asian republics from the rest of the Soviet Union, and some of the highest mountains in the world separate them from China and Kashmir, and — apart from a few stretches of river frontier — from Afghanistan and Iran (see Map 1).

For the past three centuries the majority of the population have been of Turkic affinity, but with minorities of earlier settlement (Tadzhiks, Arabs, etc.) or later immigration (Dungans from China, Russians, Ukrainians, Tatars, etc., from Europe). In the Soviet period the region has been divided into four republics by linguistic criteria. Since the frontiers between these republics have hitherto been of little economic importance, the following discussion deals with central Asia as a whole.[2]

The 1.2 million square kilometres of the four republics of central Asia form a region with a common history and a common Islamic culture. The relief, from flat sand deserts in the west to the Tien-Shan mountains in the east, concentrates the population of altogether 13 million in the oases and valleys.[3] The area available for agriculture is limited by low precipitation to the river valleys and oases, and even there high salinity (e.g., in the Fergana valley or in the Hungry Steppe) is a serious deterrent; livestock is raised in the desert and in mountain areas (notably in Kirgizia). Some of the rivers of the region, notably the Syr-Darya (the ancient Jaxartes), have for millennia been the arteries of major irrigation networks [4] and the irrigated land of central Asia now supplies the Soviet textile industry with 85 per cent of its cotton.

Measured by the time-scale of mankind, central Asia has only recently justified classification as an under-developed area. The places which saw the dawn of human culture in its stone and bronze ages were little behind later-developed centres of civilization until the European industrial revolution. Major irrigation works had already begun to be constructed in the seventh century B.C., and under a succession of different cultures and empires — Persian, Hellenistic, Parthian, Sassanid and Arab — the oasis and valley communities reached a peak of prosperity under the empire of Khorosan. Set back by the destruction of Bukhara, Samarkand and Khiva by Gengis Khan in the early thirteenth century, material conditions regained, and artistic and scientific progress exceeded, the former levels under Timur (1370–1405). The Timurid economy was supported not only by a high domestic product of agriculture and fine handicrafts, but also by lively trade relations with the rest of the

[1] The article is based partly on published statistics, partly on information supplied directly to the secretariat by the All-Union or central Asian authorities, and partly on information obtained by members of the secretariat during a visit to two of the central Asian republics—Uzbekistan and Tadzhikistan — in March 1957. An appendix specifying the sources used and the methods of statistical estimation is available post free on request from the Research and Planning Division, Economic Commission for Europe, Geneva, Switzerland.

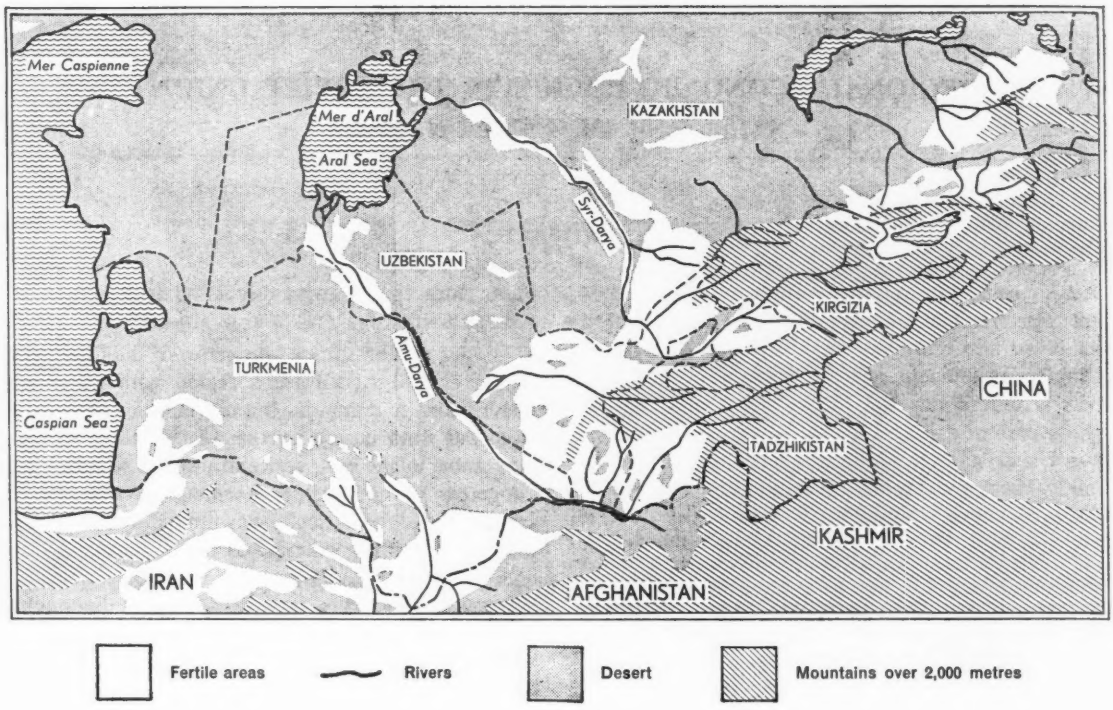
[2] Some of the southern districts of Kazakhstan are geographically and economically very similar to central Asia proper, but these areas form too unimportant a part of that republic to warrant the inclusion of Kazakhstan in the present study.

[3] Seven million seven hundred thousand in Uzbekistan, nearly one and a half million in Turkmenia and nearly two million in each of the two other republics.

[4] Though not so the Amu-Darya (the classical Oxus), which could be used for irrigation in its desert reaches only at immense cost in controlling its flow.

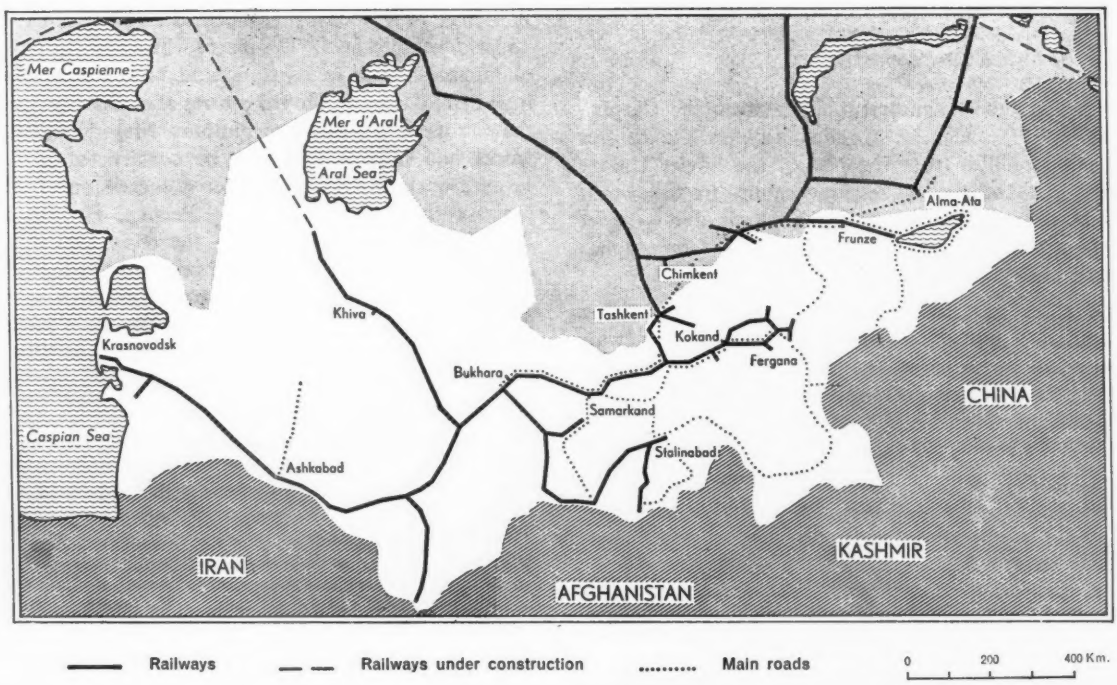
MAP 1

Political divisions and physical features in central Asia



MAP 2

Communications and major towns in central Asia



NOTE. — The boundaries and geographical names on these maps do not imply endorsement or acceptance by the United Nations.
Sources : See separate Appendix.

world — both as an exporter of silk fabrics, metalware, etc., and as the entrepôt on the " Silk Road " connecting China with Europe and the Arab world.

The diversion of trade to the southern sea routes, warfare, and consequent deterioration of the irrigation system brought economic decline at the time when Europe was in expansion. Nevertheless, it was the central Asian merchants who — in the eighteenth century — took the initiative of establishing trade with Russia, and these bonds were strengthened with the approach of the Russian frontier across the Kazakh steppes. The pattern of trade showed central Asia to be an exporter mainly of manufactures and an importer of raw materials, and to have had a consistent export surplus.[5] When the Czar, in 1801, lifted the embargo on metal sales to central Asia, iron, steel and copper exported from Russia were worked up in Bukhara into agricultural implements, weapons and utensils.

[5] For example, in 1801 manufactures formed three-quarters of Bukharan exports to Russia (cotton cloth, medicine), but only one-quarter of imports from Russia (various cloths, leather). Only 3.5 per cent of Bukharan cotton exports by value were of raw cotton. Russia compensated her trade deficit, which grew steadily, by gold deliveries.

The Russian occupation, prompted in 1865 by an interruption of raw cotton supplies during the American Civil War, started the transformation of the economic structure of the region in the direction of specialization in cotton-growing, a policy which has until now been continued by the Soviet authorities: great stress was laid on the substitution of cotton for other cultures, the area under irrigation was extended, and higher-yielding American upland cotton was introduced. Beet growing and sugar refining were established. The region was linked with other parts of the Empire by railways to central Russia and the Caspian and the number of industrial enterprises increased from 21 in 1880 to 342 in 1911. Local crafts, on the other hand, entered a period of decline which accelerated after the revolution.

The civil war after the 1917 revolution was more protracted in central Asia than in other parts of the country. The Soviets had to contend not only with " white " — and in Turkmenia, British — forces, but with national separatist movements, and both industry and — through damage to the irrigation system and conflict during the land reform (1925 to 1930) — agriculture suffered greatly.

2. Industrialization and Population Trends

Rise of Industry and Decline of Handicrafts

By the middle of the 'twenties the output of central Asian industry was still about half the 1913 level. The first and second Five-year Plans (1928-37) brought extremely rapid industrial progress, when measured in percentages. According to the official indices of the gross value of output, industrial production (excluding private handicrafts) increased more than twelve-fold between 1926 and 1940, nearly doubled between 1940 and 1950, and rose by a further two-thirds between 1950 and 1955. In considering the rate of growth in the inter-war period, it must be remembered, however, that central Asian industry was extremely small in 1926 and a percentage increase over a period of years of the order of magnitude just mentioned is no unique performance for a country in a reconstruction period or at the very first stages of industrial development. To mention only one other example: in Pakistan the index of industrial production rose more than four-fold in the six years from 1950 to 1956, but the average annual increase of per capita national income was no more than 2 per cent, owing to the smallness of the industrial sector, and to an unfavourable evolution of the terms of trade.

A better indicator of the progress of central Asian industrial development during the Soviet period can be had by measuring the successive increases in output against the fairly large volume of output achieved by the end of the fifth Five-year Plan (see Table 1). The extremely high annual percentage increases of the inter-war period thus were on average only 2 per cent of the present volume of output. In fact, the bulk of central Asian industrialization took place after 1950, since when the annual additions to output in absolute terms have been four times as big as in the inter-war period and more than three times as big as in the period from 1940 to 1950. Two observations must be made on this comparison. On the one hand, much development of the transport system was required in

Table 1

Industrial employment and output in central Asia

	1926-1940	1940-1950	1950-1955
Employment at end of period (thousands) [a]	225	368	457
Average annual percentage increase during period:			
Employment	..	5	5
Gross output	20	6	11
Average annual increment during period as percentage of 1955:			
Employment	..	3	4
Gross output	2	2 1/2	8

Sources: See separate Appendix.

[a] Employment data are counts at mid-year.

the 'thirties and brought the fruits of expanded industrial output only in the 'forties.[6] On the other hand, part of the increase in industrial output in the inter-war period represented a substitution of industrial goods for the products of local handicrafts, and the statistical "recognition" of output as producers joined co-operatives — two factors which have played virtually no role since 1940.

While the numbers occupied before the revolution in industry proper were relatively small — a recent Soviet estimate puts them at 50,000[7] — very large numbers were occupied in handicrafts. According to the 1897 census for Russian Turkestan, about 200,000 people were occupied in handicrafts and industry together. These people produced large quantities of homespun cotton and silk fabrics, shoes, silverware, etc., of which no trace can be found in the figures on which the later indices of industrial output were based. A considerable part of this handicraft production may already have suffered before the revolution by competition from Russian manufactures, and the civil war no doubt put an end to more of it, but nearly the whole of what had survived disappeared in the inter-war period: today, the numbers in handicrafts in Samarkand, the centre of central Asian craft traditions, are fewer than 4,000, and vegetables now account for the bulk of the turnover in the legendary bazaar.

If, as may reasonably be assumed, the share of handicrafts was the same in Bukhara and Khiva, whose political status put them outside the pale of statistics, as in Russian Turkestan, total employment in industry and handicrafts together was smaller on the eve of the Second World War than it had been at the turn of the century, and its share in total population seems to have declined from nearly 5 per cent in 1897 to less than 3 per cent in 1940. As late as 1955 it was still only 4 per cent (Table 2). This result, startling as it may seem at first glance, corresponds to the experience of other countries at an early stage of industrial development. Thus, in India, the total number employed in industry (including handicrafts) declined between 1911 and 1931 from 17.5 to 15.3 million or from 5.5 to 4.3 per cent of total population. A time-series of the combined volume of output of industry and crafts — if it were available for either India or central Asia — would show increases even in the periods where employment decreased, because productivity in industry is much higher than in handicrafts. On the other hand, it must be remembered that many of the handicraft products made in central Asia before the revolution, like the Indian ones, were of high quality, while many of the industrial consumer goods which replaced them were of low quality.

TABLE 2

Estimates of occupational distribution

Country and year	Industry and mining	Handicrafts	Trade	Other non-farm occupations [a]	Agriculture	Total active	Total population
	Millions						
Central Asia:							
1897 [b]	0.1	0.2	0.1	0.2	0.9 [c]	1.5 [c]	5.6 *
1940	0.2 [d]	—	0.2	0.8	3.2 *	4.4 *	10.6
1955	0.5 [d]	—	0.2	1.3	3.4 *	5.4 *	12.1
Soviet Union:							
1897 [e]	1.6	3.1	1.5	7.6	17.9 [c]	31.7 [c]	125.6
1940	11.0 [d]	2.8 *	3.3	19.4 *	44.5 *	81 *	191.7
1955	17.4 [d]	1.6	3.8	29.3 *	36.9 *	89 *	197.6 *
	Percentage of total population						
Central Asia:							
1897 [b]	*1.0*	*3.8*	*1.3*	*3.4*	*17.1* [c]	*26.6* [c]	*100*
1940	*2.1* [d]	*0.6* *	*1.4*	*8* *	*30* *	*42* *	*100*
1955	*3.8* [d]	*0.4* *	*1.5*	*11* *	*28* *	*45* *	*100*
Soviet Union:							
1897 [e]	*1.3*	*2.5*	*1.2*	*6.0*	*14.3* [c]	*25.2* [c]	*100*
1940	*5.7* [d]	*1.5* *	*1.7*	*10* *	*23* *	*42* *	*100*
1955	*8.8* [d]	*0.8*	*1.9*	*15* *	*19* *	*45* *	*100*
India, 1951	*1*	*3*	*2*	*5*	*29*	*40*	*100*
Pakistan, 1951	—	*2* *	*2*	*4*	*23* [c]	*31* [c]	*100*
Iraq, 1947	—	*2* *	*3*	*5*	*19* [c]	*29* [c]	*100*
Southern Italy, 1955	*6*	*3*	*3*	*10*	*17*	*39*	*100*

Sources: See separate Appendix.

NOTE. — Distribution between industry and handicrafts presents difficulties, and generally the figures for industry and handicrafts together are therefore more reliable than those for each of the series separately.

[a] Including armed forces.

[b] Including estimates for Khiva and Bukhara.

[c] The data considerably understate the numbers engaged in agriculture, as well as the total active population, as in these countries very few women were reported to the census as active in agriculture.

[d] "Productive" employment in state enterprises.

[e] Contemporary territory.

Urbanization and Immigration

It corresponds well to the picture given above that there was very little net movement of rural population to the towns between 1926 and 1940. Urban population increased by one million (Table 3), but the rise in numbers of non-Asians seems to have been still larger, and nearly all of this increase must have been due to immigration.[8] No doubt only a small number

[6] The Turksib and Termez-Stalinabad railways were completed in the first Five-year Plan, but the Pamir highway, the Termez-Tashkent road and the 250-kilometre road to the sulphur deposits of the Kara-Kum desert came into use only on the eve of the war, when work also began on a railway paralleling the Amu-Darya. The extension of this line to form a fifth trans-desert link (a fourth, the Mointy-Chu railway, was finished in 1951) is planned for completion in 1960 (see Map 2).

[7] Z. Rakhimbabaeva in *Pravda*, 5 June 1957; the figure is for Russian Turkestan (viz., including southern Kazakhstan but excluding Khiva and Bukhara).

[8] The remainder would have been the natural increase of residents. Persons with one European and one Asian parent are free to choose either nationality, but inter-marriage is reported to be infrequent, mainly owing to disinclination on the part of the Asians.

TABLE 3

Urbanization and nationality distribution

Millions of inhabitants

	1913	1926	1939	1956
Central Asia:				
Urban population	1.3	1.4	2.4	4.0
Rural population	5.9	6.3	8.1	8.4
Total population	7.2	7.6	10.5	12.4
of which: non-Asian nationalities [a]	0.4 [b]	0.7	2.1 *	3 [c]
Soviet Union:				
Urban population	28	..	61 [d]	87
Rural population	131	..	131 [d]	113
Total population	159	166 *	192 [d]	200
Percentage of total population:				
Urban population in central Asia	*18*	*18*	*23*	*32*
Non-Asian population in central Asia	*7* [b]	*9*	*20* *	*25* [c]
Urban population in the Soviet Union	*18*	..	*32* [d]	*43*

Sources: See separate Appendix.

NOTE. — Data refer to the present area.

[a] The classification concept of nationality has differed in each census: that of 1897 was mother-tongue; that of 1926 was ethnic; and that of 1939 was cultural.

[b] 1897, for which year the estimated total population (including Khiva and Bukhara) was 5.6 million.

[c] These data are very rough estimates.

[d] 1940.

TABLE 4

Crude birth and death rates

Per thousand inhabitants

	Births			Deaths		
	1940	1951	1956	1940	1951	1956
Central Asia, total	33.8	33.4	36.6	14.6	8.1	6.7
Urban areas	35.9	32.9	33.2	21.0	10.0	8.1
Rural areas	32.6	33.6	38.2	12.4	7.3	6.1
Soviet Union, total	31.7	26.8	25.0	18.3	9.6	7.7

Sources: Central Asia computed from direct communication from the Soviet Government; Soviet Union from *Narodnoe Khozyaistvo S.S.S.R. v 1956 godu*, 1957, p. 269.

of the immigrants went into agriculture, which remains almost exclusively an Asian preserve. It can safely be concluded, therefore, that nearly the whole of the rise in the town population in this period must have been accounted for by immigration, and that the industries set up in the inter-war period were manned predominantly by staff of European origin.

During the war equipment from factories in the European part of the Soviet Union was removed to central Asia, the construction of new industrial plant was expanded and mineral extraction, especially of coal and oil, was greatly increased; as mentioned earlier, over-all industrial output nearly doubled between 1940 and 1950. At the same time, the war created a new big wave of immigrants into the region. Many were workers, often women, from the transferred factories; others were people evicted from the Caucasus and Crimea for alleged national disaffection; others were prisoners used for work on construction projects and in agriculture. It is likely, however, that many of the war-time immigrants left again after the war.[9]

From the extremely scanty information that is available about birth and death rates (see Table 4) it seems that the natural increase of population in the later post-war years has been much higher than elsewhere in the Soviet Union. The death rates are so extraordinarily low, especially in rural areas, as to suggest major deficiencies in reporting,[10] but even if allowance is made for this, it seems likely that the rate of natural growth of population since 1950 has been as high as 2½ per cent per annum. However, the absence of information about sex and age distribution for the post-war years precludes a closer analysis of the population trends.

The war-time evacuees, as well as transfers from less essential occupations, offset the call-up of men in the region, but this dilution of the labour force had an adverse effect on output per man, so that it fell during the war, and as late as 1950 seems to have been only some 10 per cent higher than in 1940, as can be seen from the figures below: [11]

	Industrial employment	*Industrial output*	*Output per man*
Average annual percentage rate of growth:			
Central Asia:			
1940 to 1950	5	6	1
1950 to 1955	5	11	6
Soviet Union:			
1940 to 1950	3	6	3
1950 to 1955	4	13	9
Central Asia as percentage of the Soviet Union:			
1950	2.6	2.4	..
1955	2.6	2.2	..

Sources: Statistics underlying Table 1 for central Asia. Values in 1926/27 roubles extrapolated from 1950 to 1955 from *Narodnoe Khozyaistvo S.S.S.R. v 1956 godu*, p. 5; *Promyshlennost S.S.S.R.*; for the Soviet Union.

[9] It was not until 1957, however, that groups evicted from the European part for national disaffection (except the Crimean Tatars) were permitted by decree to return to their region of origin; transfers will begin in 1958.

[10] While in most under-developed countries registration is incomplete not only for deaths but also for births, in central Asia the existence of state children's allowances gives a strong incentive to parents to report fully on births.

[11] There were other reasons than dilution for the decline in the war years, such as over-staffing and utilization of capacity beyond the optimum. Moreover, the official index tended to over-state the true decline in productivity: cotton ginning, which represented one-third of the pre-war output of central Asia, and which, like all other products, was written into the

Although output per man has developed more favourably since 1950, it has continued to lag behind that of the Soviet Union as a whole. There are signs, however, that more emphasis is now being given to attempts to improve output per man. The 1957 Plan for Uzbekistan, for example, envisages that 20 per cent of the net addition to industrial output will be derived from labour inflow and 80 per cent from higher output per man employed.

In the post-war years central Asia has entered a new stage of its development. For the first time a significant share of the natural increase of the labour force in the rural areas moved to the towns to take up employment, with the result that large numbers of the indigenous population began to familiarize themselves with industrial life; and this occurred despite the return of demobilized soldiers and some further inflow of specialists and skilled workers to staff new industries.[12] In this way the large-scale industries in the region gradually began to lose their character as a predominantly "extraneous" sector in the central Asian economy.[13]

As previously shown, industrial output in central Asia has expanded at a high rate over a period of thirty years but, owing to the high rate both of natural population growth and of immigration, the share of population in industry is no more than half that of the Soviet Union as a whole: central Asia has about 2 per cent of Soviet gross industrial output, but more than 6 per cent of the population. Moreover, only 12 per cent of the population increase between 1940 and 1955 went into industry, while in the rest of the Soviet Union the net additions to industrial employment in the same period were considerably larger than the population increase, as can be seen from the figures below:

Changes from 1940 to 1955	*Central Asia*	*Rest of the Soviet Union*
Total population	+2 million	+4 million
Industrial employment	+230 000	+6 million
Increment of industrial employment as percentage of increase in population	*12*	*150*
Agricultural employment (estimate) .	+200 000	−7 million

index at its gross value although having a low value-added, declined in favour of production at a higher degree of fabrication. This change in composition depressed the gross output index from which the productivity figures were derived.

[12] Apart from unskilled labourers the new kaolin industry, for instance, is being manned by immigrants from the European part of the Soviet Union.

[13] In 1934 all the workers in the huge Tashkent textile combine were Russians, and it is only recently that Uzbeks began to be employed: they now number 11 per cent of the staff. The Tashkent agricultural engineering works had a similar record, but now employs 25 per cent Uzbeks. The staff of the Stalinabad textile mill shows currently 30 per cent of Asian nationalities. Of the 75,000 population of Chirchik, a new town created in the 'thirties round a chemical plant, 53 per cent are by now central Asians, the rest originating in other regions of the U.S.S.R. The silk-spinning industry, on the other hand, is to a large extent locally staffed; in the biggest plant, the Margelan silk combine, the share of local nationalities is as high as 70 per cent. In the tea-packing plant in Samarkand, 80 per cent of the staff are of local nationalities.

TABLE 5

Ratio of agricultural land and livestock to population in central Asia and other selected countries

	Sown area [a]			Livestock [b]		
	Hectares per inhabitant	Hectares per person active in agriculture [d]	Share of sown area irrigated (percentage)	Units [c] per inhabitant	Units [c] per person active in agriculture [d]	Number of goats and sheep as percentage of total livestock numbers
Central Asia :						
1916	0.50 [e]	..	*67* [e]	0.50	..	*81*
1955	0.44	1.6 *	*60*	0.41	1.5 *	*86*
Soviet Union :						
1916	0.74 [e]	..	*3*	0.37	..	*54*
1955	0.94	5.0 *	*5* [f]	0.40	2.1 *	*54*
Other countries :						
India, 1955	0.3	0.9	*20*	0.5	1.3	*31*
Pakistan, 1953	0.3	0.6	*45*	0.4	1.0	*30*
of which : West Pakistan . .	0.4	1.0	*65*	0.5	1.3	*33*
Afghanistan, 1952	0.3	..	..	0.3	..	*92*
Iran, 1954	0.3	..	*50*	0.3	..	*84*
Iraq, 1951	0.5	1.6	*60*	0.6	1.9	*85*
Egypt, 1954	0.1	0.3	*100*	0.1	0.2	*50*
Southern Italy, 1954	0.3	1.0	*5*	0.1	0.4	*78*

Sources : Soviet data as for Tables 2, 6 and 7 and *Bolshaya Sovetskaya Entsiklopedia*, Vol. 31, p. 225; other countries from national statistics.

[a] The figures for Pakistan, Egypt and southern Italy include fallow.

[b] The figures include cattle, pigs, sheep and goats, but exclude horses, camels and poultry.

[c] Livestock numbers are expressed in terms of feed units according to the following conversion factors: cattle, 0.8; pigs, 0.2; sheep and goats, 0.1.

[d] The figures include an estimated adjustment to allow for under-reporting of women working in agriculture in the non-Soviet countries.

[e] 1913.

[f] 1952.

It is not surprising, therefore, that the process of urbanization has moved at a much slower rate in central Asia than in the rest of the Soviet Union. While the share of the population living in towns was very similar in the two regions before the revolution, it is today only 32 per cent in central Asia, against 43 per cent in the Soviet Union as a whole. Nevertheless, as Table 2 shows, the region is by now much more industrialized than neighbouring Asian countries, India not excepted.

It was mentioned above that the natural rate of increase of population is much higher in central Asia than elsewhere in the Soviet Union. In future years, when these generations of very different size reach working age, it will be difficult to avoid an acute contrast between the employment situation in central Asia and in other regions of the Soviet Union, and present population trends therefore provide a powerful argument in favour of preventing further immigration and pushing the future rate of industrialization of central Asia far ahead of that of the Soviet Union as a whole.

It is pertinent to ask why the Soviet Government has continued the pre-revolutionary policy of large-scale immigration into central Asia, although the natural rate of growth was higher than elsewhere in the Soviet Union, and although the sown area per inhabitant (rural or total) in central Asia, even before the revolution, was one-third lower than the all-Russian average (Table 5). There were probably several reasons for this; one of them, no doubt, was the desire to strengthen the non-Asian sector in a region which during the revolution and the civil war proved to have strong separatist tendencies; another may have been a traditional preference for women workers in textile industries combined with the difficulties of recruiting women among a Moslem population. An economic motivation for the immigration policy may be found in the desire to avoid a rural exodus which would conflict with the major aim of Soviet policy in the region, which was to raise production of cotton in order to make the Soviet cotton industry independent of imports. The changes which have taken place in the pattern of the central Asian economy have to be understood in the light of this overriding emphasis on the cultivation of cotton.

3. The Role of Primary Production in the Central Asian Economy

Central Asian agriculture differs considerably from that characteristic of the bulk of Soviet farming. Cotton has been grown as a main crop on the irrigated land for at least seven centuries, together with rice and — via the mulberry — silk. Animal husbandry (mainly of sheep and goats) is practised in the upland and semi-desert regions and between the oases of the deserts. In the land between, grain is grown on non-irrigated and low-yielding land. Although comprising only three per cent of the Union's sown area, the region is thus highly important as a supplier of raw materials — cotton, silk and wool — for the Soviet textile industry, while food is produced primarily for local consumption, save for shipments of tinned and fresh fruit and a little packed meat.

As compared with neighbouring Asian countries, central Asia — now, as well as before the revolution — enjoys the advantage of having more cultivated land per inhabitant; and, moreover, most of it is irrigated (Table 5). Grazing facilities also tend to be better, and although livestock numbers per inhabitant are smaller now than they were before the revolution, they continue to be larger than in neighbouring countries such as Afghanistan and Iran. Owing to the relatively low population density, central Asian agricultural resources also compare favourably with the poor and least industrialized regions of Europe. For instance, central Asia has considerably more land per inhabitant than southern Italy, and livestock numbers are four times as high.

Average yields, whether of land or of livestock, are not much different from those obtained under similar natural conditions in neighbouring countries. The important exception is cotton, where continuous and systematic efforts have raised yields to a level comparable with that of Egypt, where the climate is more propitious for cotton production than in large parts of the central Asian cotton areas.[14]

After the large-scale amalgamation of farms in the years 1950 to 1953, the typical central Asian farm has become a huge cotton plantation. There are now only 3,600 state and collective farms in the whole of central Asia, with an average sown area of 1,450 hectares against some 14,000 farms in 1940 with an average of less than 400 hectares. In addition, most farms

[14] Between the late 'thirties and the early 'fifties average yields of cotton in central Asia fluctuated round the Egyptian average, which is the world record for cotton yields per hectare. Yields in central Asia are now somewhat higher; but long-fibre types of cotton, which yield less per hectare than short-fibre types, account for a much smaller share of the total in central Asia than in Egypt. The statement often made in Soviet sources, that central Asian average cotton yields are several times higher than those of the United States or of neighbouring Asian countries, requires the qualification that in all these countries a large share of the cotton is grown on non-irrigated land. In the Soviet Union itself cotton production on non-irrigated land gave yields one-fifth of those obtained on irrigated land (data refer to 1940) and by now cotton cultivation on non-irrigated land has been almost entirely abandoned. The comparison with the United States misinterprets the policy of American farmers, which concentrates on raising yields per unit of labour rather than per unit of land. The former are many times higher in the United States than in central Asia.

have many thousands of hectares of rough grazing, sometimes as much as 200 km. away from the centre of the farm. The farm members and their families (on the average about 400 families per farm) continue to live in their old scattered villages, but the inhabitants of each village are normally organized in a separate "work brigade". Many more agronomists and farm technicians are used now than before the war, as can be seen from the figures below, but they represent the same smaller proportion of the agricultural labour force in central Asia in relation to the Soviet Union. Most of the work in the fields is still done by hand, although some work, such as ploughing of cotton fields and sowing of cotton, is nearly completely mechanized. Large numbers of machines for harvesting cotton have been introduced in the last decade, but there are frequent complaints that they are not being efficiently utilized.

	Number		Index number (Soviet Union = 100)	
	1940	1955	1940	1955
Per 10,000 workers in agriculture:				
Agronomists	9	25	58	58
Farm technicians	12	40	58	58
Tractors [a]	120	220	78	56
Per 10,000 ha. of sown area:				
Tractors [a]	72	138	160	177
Grain combines [b]	10	17	61	64
Cotton picking machines [c]	6	142	..	..

[a] In 15 HP units.

[b] Per 10,000 ha. sown to grain.

[c] Per 10,000 ha. sown to cotton. The figures include the cotton areas in Transcaucasia.

Increasing Specialization in Cotton

The pre-revolutionary policy, already noted, of developing cotton production in central Asia was accomplished both by positive measures (irrigation, introduction of better types) and by restrictions on rice cultivation in order to reserve irrigation facilities for cotton. The plan to build a railway connecting Siberia with central Asia also dates from before the revolution, although this project, the "Turksib", came into existence only during the First Five-year Plan. The main purpose of this railway was to carry grain from Siberia, thus permitting the central Asian region to have a considerable deficit in grain production as a counterpart to the growing specialization in cotton.[15]

[15] The Czarist Minister of Agriculture wrote in 1912: "Every additional ton of Turkestan wheat is a competitor to Russian and Siberian wheat, every additional ton of Turkestan cotton is a competitor to American cotton. It is therefore better to supply this region with imported cereals even if they are more expensive, and make its irrigated land available for cotton cultivation." (A. V. Krivoshein, quoted by A. Melkich, *Stand und Aussichten des Baumwollbaus in der Sovjet-Union*, Berlin 1933, p. 42).

TABLE 6

Agricultural area and output of major crops in central Asia

	1913	1928	1940	1955
Millions of hectares				
Total irrigated area	2.8	..	..	3.8
of which: sown	2.5	..	2.9 *	3.2
Non-irrigated sown area [a]	1.1	..	2.4 *	2.2
Total sown area	3.6	3.4	5.3	5.4
of which: Cotton	0.5	0.8	1.2	1.7
Grain	2.7	2.2	3.0	2.3
Fodder crops	0.2	0.2	0.7	0.9
Percentages of irrigated sown area				
Cotton	22	..	42 *	54
Grain [b]	69 *	..	30 *	10 *
Index numbers 1913=100				
Cotton: Area	100	146	229	321
Yields	100	71	136	164
Crop	100	103	312	526
Grain: Area	100	80	110	83
Yields [b]	100	..	85 *	75 *
Crop [b]	100	..	90 *	65 *

Sources: See separate Appendix.

[a] Including occasionally irrigated land (on which cotton cannot be grown).

[b] These estimates were based on the assumptions that grain occupied 90 per cent of the non-irrigated sown area; that irrigated yields were a constant 10 q./ha.; and that non-irrigated yields were a constant 5 q./ha. The bases of these assumptions are described in the separate Appendix.

The Soviet Five-year Plans have pushed this specialization in cotton much further. In the years just before the revolution central Asia supplied about 50 per cent of Russian cotton consumption, other regions about 7 per cent, and foreign countries 43 per cent. At the end of the civil war in Asia (1924/25) the share of foreign imports had risen to 58 per cent; but from 1935 onwards imports stopped, and central Asia now supplies 85 per cent of a much increased internal consumption and some exports. Cotton production in central Asia is by now over five times that grown on the corresponding territory before the revolution (Table 6). At the same time, the quality has improved, and an increasing share of the production consists of long-fibre cotton.

This spectacular increase in central Asian cotton production was obtained by trebling the area under cotton and raising yields per hectare by about two-thirds. The increase in the cotton area was achieved partly by a number of large irrigation projects which have increased the area under irrigation by 35 per cent,[16] and partly by replacing other crops, mainly

[16] Among the most important of these major works are the main Fergana Canal, the Farkhad dam and the (currently progressing) Hungry Steppe irrigation scheme in Uzbekistan, the opening up of the Vakhsh valley and the Kairak-Kum reservoir in Tadzhikistan, the Chu Canal and the Orto-Tokoi reservoir in Kirgizia and the Kara-Kum Canal, 400 km. of which will be completed by 1958, in Turkmenia.

cereals, by cotton on the old irrigated areas. The increase in yields was obtained primarily by the application of very large amounts of fertilizer, but a number of other measures contributed to this result: the land reform in the 'twenties and the subsequent collectivization abolished the old system of water rights and made possible a more rational system of water distribution; agricultural methods were improved through the use of better seeds, closer planting, tractor ploughing and the use of insecticides; and pricing policy gave sharply progressive remuneration for high yields.

Whereas the application of chemical fertilizer is at very low levels by European standards in Soviet agriculture as a whole, it is by now generous on cotton areas. In 1953, about one-third of the total production of mineral fertilizers in the Soviet Union was used on cotton fields, and the response of yields to the increase in fertilizer input has been spectacular, particularly in the 'thirties.[17]

As a result of the much more rapid growth of the area sown to cotton than of all irrigated land under crops, the share of cotton, which before the revolution was about one-fifth of the sown irrigated area, now seems to be more than one-half,[18] while the share of grain has been reduced from two-thirds of the total area to probably no more than 10 per cent. The concurrent increase — probably about a doubling — of the dry-farming of cereals on non-irrigated land has been far from sufficient to offset the reduction of output from irrigated land, since yields are much lower on the dry land, and imports of grain from other parts of the Soviet Union must have been steadily increasing.[19] Moreover, the high premia paid for cotton were a temptation to reduce the share of alfalfa in the traditional cotton-alfalfa rotation, and cotton has thus tended increasingly to become a monoculture. In 1950 to 1956 it accounted for 80 per cent of total money income of collective farms in Uzbekistan and Turkmenia. Livestock production, on the other hand, accounted for no more than 11 per cent. It has become more and more clear that the mere use of mineral fertilizers will not be sufficient to raise, or indeed to maintain, cotton yields; a more varied crop rotation must be introduced with a larger share of the area devoted to soil-improving fodder crops.

Livestock Breeding

Before the revolution, central Asia had considerably more livestock (measured in fodder units) per head than the Russian empire as a whole, but a much larger share of it consisted of sheep and goats. The civil war and the collectivization campaign brought so large a reduction of herds that the pre-revolution level was reached only on the eve of the Second World War (Table 7). Even today, when the population is 75 per

[17] Mirko Lamer: *The World Fertilizer Economy*, Stanford University Press, 1957, p. 573:

	Fertilizer application in Uzbekistan	*Average yield of unginned cotton in Uzbekistan*
	(Quintals per hectare)	
1933	0.15	8.9
1934	1.66	7.9
1935	2.70	11.6
1936	5.10	16.2
1937	5.64	16.1
1938	5.32	16.8
1939	5.66	17.0

[18] In addition, the share of fodder crops (mainly alfalfa used in the rotation with cotton) seems to have risen from one-tenth to one-quarter of the sown irrigated area.

[19] Since the mid-'thirties, when the substitution of dry-farming of cereals for cultivation on irrigated land became important, no figures have been made available for either yields or output of cereals in central Asia.

TABLE 7

Livestock numbers in central Asia

Year	Million head							Total (excluding camels and horses) in livestock units [a]			
								1916 = 100		As percentage of number in Soviet Union	Collectively owned livestock as percentage of total
	Camels [b]	Horses	Cows	Other cattle	Pigs	Sheep	Goats	Total	Per inhabitant		
1916	1.4	1.4	1.0	1.9	—	10.6	2.3	*100*	*100*	*5.9*	—
1924	1.0	0.7	0.6	1.3	—	7.5		*63*	*61*	*3.8*	—
1926	1.3	0.9	0.7	1.7	—	11.3		*84*	*81*	*4.6*	—
1935	..	0.8	0.6	1.1	0.2	3.8	1.4	*52*	*40*	*4.9*	*61*
1941	0.3	1.1	1.1	2.0	0.2	9.1	4.0	*105*	*71*	*6.0*	*41*
1953	0.3	1.2	1.0	2.0	0.3	17.2	3.8	*125*	*75*	*6.1*	*75*
1956	0.3	0.9	1.2	2.2	0.5	18.9	2.8	*136*	*80*	*6.0*	*69*

Sources: See separate Appendix.

[a] Same conversion factors as for Table 5.

[b] Total Soviet Union.

NOTE. — Variations in census dates render the figures not fully comparable. Data for 1916, 1935 and 1941 refer to 1 January; for 1924 and 1926 to the spring; and for 1953 and 1956 to 1 October.

cent larger than before the revolution, cattle numbers are only 17 per cent higher. Numbers of sheep, on the other hand, have increased considerably, and their quality has been improved.

It is surprising that the increase in cattle numbers has been so small, since fodder crops on irrigated land have increased considerably (Table 6), owing to their use in the rotation with cotton. The explanation may at least partially be found in the ploughing up of non-irrigated grazing areas for grain.

Most of the cows in central Asia are privately owned, and their yields seem to be as low as in neighbouring Asian countries. Until very recently the small cattle herds belonging to the collective farms seem to have had even lower yields than the private cattle [20], and only a few state pedigree farms with improved breeds and modern feeding methods obtained yields which were high by European standards.

As late as 1955 the average milk yield of cows in Uzbekistan was 816 kg., which is less than on the eve of the collectivization and roughly half the Soviet average.[21] Since then, however, the increased emphasis on livestock improvement in collective farms, including breed improvement,[22] building of byres and use of silage, seem to have resulted in a considerable increase of yields.

Before, as well as since, the revolution, central Asian trade in livestock products with other regions has been very small. The fact that livestock numbers per head of population have never regained the pre-revolutionary level, and that milk yields have until very recently remained largely unchanged, implies that vegetable consumption must have increased. There is no information, however, about either production or consumption of vegetable food in central Asia which can throw light on this change. For the same reason it is impossible to make even a rough estimate of the level or development of total agricultural output.

The Effects of the Cotton Premium System on Income and Productivity

It was mentioned above that one of the instruments used as an incentive to raise cotton production per hectare is the payment of very high premia to farms that exceed the planned targets or obtain high yields. This system was introduced in 1935 at the same time as it was decided to use very large amounts of mineral fertilizer on the cotton fields, and it is therefore difficult to judge its effects on output per unit of land. But even if part of the spectacular rise in yields in the 'thirties can be ascribed to the premium system, some of the potential benefits at least were lost because the effects of the system on output per unit of labour tend to be negative rather than positive, as will be seen below.

Table 8 contains data on labour input, other costs and income from cotton production in collective farms in Uzbekistan, arranged according to output per hectare. The group of farms with the highest yields use nearly 50 per cent more labour, and their money expenditure on other inputs is about two-thirds higher per hectare than in the lowest group. The differences in yields between the farms are so large, however, that per quintal of cotton produced the highest-yielding farms employ hardly more than half the labour used on the low-yielding farms and 60 per cent of the other expenses. If the same prices were paid to all farms both for labour input and for cotton output (i.e., with no premium system whatsoever) the high-yielding farms would give much better economic results than the low-yielding, and there is thus no danger that the elimination of the premium system would make farmers uninterested in raising yields any further.

The premium system on the scales valid in 1953 implied, however, that 67 per cent more per quintal was paid to the high-yielding farms than to the low-yielding, with the result that the surplus left over for taxes, investments and payments to the collective farm members for labour-days was more than seven-fold greater per hectare and five-fold greater per labour-day. In 1956 the basic price of cotton was increased and the premia probably lowered: the divergence effective under the 1953 scales must have been reduced, but the structure of the premium system was retained.

Since tax differences between the high- and the low-yielding farms seem to be fairly small, the premium system results in enormous differences between farms, both in living standards and in the resources for investment in the farm or in its own schools, hospitals, dwellings, club-houses, etc., which in central Asia are heavily dependent on farm self-finance, as the following figures show:

The differentials in ability to make productive investments and to pay for the assistance of agronomists

Percentage of 1951-1956 Construction financed by Collective Farms

	Uzbekistan	*Soviet Union*
Schools	86	50
Places therein	79	26
Hospital beds	21	..
Kindergarten places	72	..
Crèche places	90	..
All investment (1955)	30	11

[20] In 1954 in Uzbekistan the average milk yield of collective farm cows (34 per cent of the total) was 348 kg.

[21] The comparison is restricted to Uzbekistan, as a post-war series is available only for that republic, but before the war Tadzhik and Turkmen milk yields were lower than in Uzbekistan.

[22] The spread within farms brought by this gradual introduction of improved breeds is remarkable. On the Lenin collective farm near Stalinabad in early 1957 there were 170 cows in a modern byre, with an average yield of 3,600 kg., and 720 other cows with an average yield of only 500 kg.

TABLE 8

Costs and earnings in cotton production in 692 Uzbek collective farms in 1953

	15 q./ha. and below	15.1 to 20 q./ha.	20.1 to 25 q./ha.	25.1 to 30 q./ha.	Above 30 q./ha.
	139 farms	199 farms	174 farms	117 farms	63 farms
	Units	Index numbers: low-yielding farms (15 q. and below per ha.) = 100			
Input of labour :					
Number of labour-days per hectare	212	100	113	124	136	147
Number of labour-days per quintal	17.4	100	78	67	62	53
Other costs : [a] [b]						
Roubles per hectare	1 317	100	120	144	149	166
Roubles per quintal	108	100	84	77	67	60
Gross income : [a]						
Roubles per hectare	2 702	100	153	243	336	462
Roubles per quintal	221	100	106	131	152	167
Surplus disposable for payment of labour, [c] *taxes and investments :*						
Roubles per hectare	1 385	100	182	337	514	743
Roubles per quintal	113	100	127	182	232	270
Roubles per labour-day	6.50	100	163	274	378	508

Sources : Materialy nauchno-proizvodstvennoi konferentsii, posvyashchennoi voprosam dalneishego podyoma ekonomiki khlopkoseyushchikh kolkhozov Uzbekistana, Tashkent, 1956, and *Khlopkovodstvo,* No. 2, 1956.

[a] Includes the money equivalent of the cotton delivered as payment to machine and tractor stations.

[b] Includes salaries of labour recruited from outside the farm.

[c] Includes the money equivalent of purchased grain delivered in kind as payment for labour-days.

and technicians cannot avoid having distorting effects on the average productivity of central Asian cotton cultivation, because these inputs thereby tend to be lowest on the farms where they would have the largest effects, and because the system — when practised over several decades — causes an accumulation of redundant labour in the high-yielding farms. This phenomenon of over-staffing requires some further explanation.

In central Asia, as elsewhere in the Soviet Union, labour mobility in agriculture is restricted. Permission from the authorities is necessary in order to take up non-agricultural employment, and such permission is given only to farm members upon proof that their farm agrees to their departure. Conversely, nobody can join a collective farm without the agreement of the members, apart from the children of existing members who have a right to membership on coming of age. This system, while preventing a movement of labour from farms paying low dividends per labour-day to those paying high dividends, is nevertheless unable to prevent a rapid increase in the number of members in the high-paying farms, where few of the children coming of age want to leave the farm.[23]

[23] Members of low-paying farms, moreover, may be prevented by this system from leaving for more remunerative outside employment, but it is not known whether farm-members do in fact exercise their prerogative in this manner.

Table 9 supports the conclusion that the large differences in labour density between the high- and the low-yielding farms reflect primarily the accumulation of superfluous labour on the high-yielding farms and only to a lesser extent a labour shortage on those with low returns precluding the intensity needed for raising yields. It can be seen from this table that only a minority of the low-yielding farms had less than 1.5 ha. of cotton per worker, while only three of the high-yielding farms used as little labour and many had less than one hectare per worker. The farms with much available labour naturally used more than the farms with less labour (up to 50 per cent more labour-days per hectare). That there is too much labour on the densely populated farms is indicated by the pronounced tendency to work fewer days per man on these farms, and by the fact that this tendency applies not only to the good, but also to the bad farms — implying that the latter do not think the use of more labour would have much effect on production.

The most striking evidence, however, that the high-yielding farms are overstaffed is provided by the figures for yields per hectare on farms using more or less labour. It appears that inside the group of low-yielding farms, those that use more labour have some-

TABLE 9

Relation between input of labour and yields in Uzbek cotton farms in 1953

	Hectares cultivated per worker			
	More than 1.5	1.21 to 1.5	1.01 to 1.2	1 or less
Number of farms :				
Low-yield farms	113	16	10	0
Medium-yield farms	70	62	22	20
High-yield farms	3	23	20	17
Labour days per man :				
Low-yield farms	387	346	329	0
Medium-yield farms	409	352	338	314
High-yield farms	395	374	356	323
Labour days per hectare :				
Low-yield farms	201	240	293	0
Medium-yield farms	233	265	300	348
High-yield farms	219	290	320	350
Quintals produced per worker :				
Low-yield farms	23.0	18.7	15.7	0
Medium-yield farms	39.0	30.5	25.8	20.4
High-yield farms	60.0	43.8	37.7	31.0
Quintals produced per hectare :				
Low-yield farms	11.9	12.9	13.9	0
Medium-yield farms	22.3	22.9	22.9	22.5
High-yield farms	33.2	33.9	33.8	33.6

Sources : As for Table 8.

NOTE. — " Low-yield farms " group those with 15 q./ha. or less of cotton, " medium-yield farms " those with 20.1 to 25 q./ha. and " high-yield farms " those with more than 30 q./ha.

what higher average yields per hectare than those which use less labour, but inside the groups of medium and good farms there is no difference at all, except for the farms which have more than 1.5 ha. per worker. Thus, the effect of the accumulation of labour on the good farms caused by the high incomes brought by the premium system is to raise the costs of cotton cultivation and to reduce output per man. As can be seen from the table, output per man on the over-staffed high-yielding farms is one-third or even one-half less than on the three good farms with more than 1.5 ha. per worker.

It is clear that the tendency for people to cling to those farms which happen to have particularly good natural conditions is strengthened by the premia paid for high yields. While the premia are thus largely ineffective as an incentive to higher yields, they create an extra differential rent for those who have had the good fortune to be born into a well-situated farm. The paradoxical result of this system is that the highest paid labour in central Asian (and probably in all Soviet) agriculture has a marginal productivity probably approaching zero, while the marginal productivity of labour seems to be considerably higher on those farms where the payment per labour-day is lowest.

The figures below, comparing the actual use of labour in Uzbek cotton cultivation with Egyptian labour standards and with the labour norms laid down by the Soviet authorities in 1925, can serve as a further illustration of the level of labour productivity in central Asian cotton production.

	Days used per hectare and per crop of cotton
Uzbek collective farms in 1953:	
With yields of 15 q. and below	141 man-days
With yields of 20.1 - 25 q.	176 „ „
With yields above 30 q.	208 „ „
	.. machine-days
Labour requirements in 1925 according to the Central Cotton Committee in Moscow	22 man-days +74 days of juvenile labour +17 horse-days
Labour requirements in Egypt about 1950	100 man-days +210 child-days

It is interesting to note that the actual use of labour in 1953, even on the low-yielding farms, was much beyond what had been deemed necessary in 1925 before mechanization had started,[24] and the use of adult labour was much higher than in Egypt with its enormous labour surplus; but the comparison is made difficult by the widespread use of child labour in Egypt. Much larger differences in labour requirements between central Asia and Egypt might reasonably have been expected, however, because cotton production in central Asia is mechanized to a much higher degree and because nutritional and health standards (and hence the *potential* labour productivity) of the rural population are much higher in central Asia than in Egypt.

In near-by Asian countries, such as Pakistan and Iraq, the last few decades have seen very large reductions in irrigated areas due to water logging and salinity and references by central Asian experts indicate that similar damage—although probably on a smaller scale—has taken place in central Asia.[25] Some Soviet agricultural experts estimate the share of irrigated land in central Asia suffering from salinity and water-logging to exceed 50 per cent, while others believe the share to be considerably lower.[26] The yields on land so affected are reported seldom to exceed 15 to

[24] The present use of labour on most farms exceeds also the amount which was considered normal before the revolution, where 1.6 ha. under cotton was assumed to be the maximum one man could cultivate.

[25] The disturbances during the civil war, the land reform and collectivization seem to have brought a considerable part of the old irrigation canals into disuse or to have caused water-logging and salinity to such an extent that many areas earlier under irrigation could not be recovered.

[26] E.g. Discussion by V. A. Shaumyan of R. A. Alimov's paper " The Cultivation of New and the Improvement of Old

19 quintals per hectare while the typical yields on land undamaged by salt and waterlogging are given as about 25-27 quintals per hectare. This seems to indicate that the spoiling of the land by salt is a main explanation of the differences in yields in central Asia.

In cases where the low yields are due to salinity, it seems a self-defeating policy to try to raise yields by a premium system which makes the available labour prefer those farms where there is least need of drainage works to eliminate the salt. There is, however, some disagreement among central Asian specialists about the extent to which the salinity can or cannot be repaired by draining, given the local soil conditions.

There is much concern about the low level of labour productivity, particularly in Tadzhikistan, where the agricultural population is more dense than in Uzbekistan and where it is hoped to double labour productivity in cotton production between 1955 and 1960. However, it is not by increasing the mobility of labour, but by further mechanization and intensification of production, that it is hoped to raise output per man. Much is expected from the planned expansion of stock breeding; but since the need is primarily for using more fodder per animal simultaneously with the introduction of better breeds, it would not seem that much additional labour would be required, especially since the introduction of more fodder (and hence less cotton) in the rotation would considerably lower labour requirements in plant production.

In order to enlarge the fields so that more machinery can be used, a new irrigation system is now being introduced which provides for temporary instead of permanent canals. It may well be asked, however, whether these changes will actually be able to reduce the labour surplus, unless the premium system is abolished and taxation changed in a way that makes other work—inside as well as outside agriculture—more attractive in relation to work on the high-yielding cotton farms.

The Composition of Industry and the Trade with Other Regions of the Soviet Union

The specialization in cotton is characteristic not only of central Asian agriculture, but also of its industry. Cotton ginning and production of cotton-seed oil, fertilizers and cotton-picking machines are among the major industries in the region, together with cotton spinning and weaving (Table 10). However, only a very small share of the cotton grown in central Asia is spun and woven on the spot; with 85 per cent of the cotton production of the Soviet Union, central Asia accounts for only 4 per cent of the spinning and 5 per cent of the weaving of cotton. This implies that more than 90 per cent of the central Asian cotton is exported as raw fibre to other parts of the Soviet Union. Similarly the bulk of central Asian wool and silk is processed in other regions of the Soviet Union.

Investment over the last three decades in systematic geological prospecting has shown that the region contains large deposits of ores and other minerals, in addition to oil, gas, uranium and water resources which would support those types of industry which are large consumers of energy.[27] So far, however, heavy industry in the region has mainly been limited to the extraction of coal and oil and some ores, nearly all the latter being exported in crude form to the metallurgical centres in Siberia. Since the war, a start has been made in processing metals in the neighbourhood of the mines, but so far only small amounts of iron and lead are smelted.[28] Both steel and an increasing range of engineering products are produced in the region, but in both cases local production accounts for only around 1 per cent of the Union total, while more than 6 per cent of the population of the Soviet Union live in central Asia.

While industries connected with cotton production have a much higher, and metal and engineering industries a much lower, proportion of the country-wide aggregates than the region's share in total population, a wide range of industries producing building materials and light consumers' goods show a share of total Soviet output that does not fall much short of the share of population (Table 10). Generally, therefore, central Asia can be characterized as a region equipped with a fairly broad range of consumers' goods industries, producing for the local market but dependent on imports for nearly all capital goods, and with scarcely any export industries save crude processing such as cotton ginning, oil pressing and silk spinning. Apart from some exports of ores and mineral oil, the region is therefore completely dependent on its agriculture, and above all on its cotton, to pay for necessary imports of cereals, timber and industrial goods.

Irrigated Land" in *Obedinyonnaya nauchnaya sessia Akademia Nauk Uzbekskoi S.S.R. i Soyuznikhi po voprosam razvitia khlopkovodstva (1954 god)*, Tashkent, 1956, p. 128.

[27] The deposits include among metals iron, copper, lead, mercury, zinc, corundium, molybdenum, vanadium, wolfram, antimony, gold and silver and among industrial chemicals sulphur, kaolin, arsenic, strontium, mirabilite (Glauber salts), calcite (Iceland spar), ozocerite, bromide, iodine, and bismuth. The hard coals of the region are poor in calorific content (4,610 cal/gr.) compared with Kazakh (5,880) or Donbas deposits (6,500) but the brown coals are among the richest of the Soviet Union. The oil deposits are connected by pipeline to a port on the Caspian sea.

[28] Copper metallurgy should perhaps be added, not only because there is probably by now a copper smelter in Almalyk, but also because some of the ores are smelted at Chimkent in Kazakhstan, only 120 km. from Tashkent.

TABLE 10

Factory production of selected industrial goods in central Asia

Product	Unit	Quantity					Percentage of total Soviet output				
		1913	1928	1940	1950	1955	1913	1928	1940	1950	1955
Energy :											
Coal	Million tons	0.2	0.2	1.7	3.8	5.9	*1*	*1*	*1*	*2*	*2*
Oil		0.2	—	0.8	3.4	4.3	*1*	—	*2*	*9*	*6*
Electricity	Million kWh	—	—	0.7	3.2	5.1	—	*1*	*1*	*4*	*3*
Natural gas	Million m³	..	—	—	0.1	0.2	—	—	—	*2*	*3*
Total energy	Million coal tons	0.3	0.3	2.6	8.9	12.6	*1*	*1*	*1*	*3*	*3*
Building materials :											
Cement	Million tons	—	—	0.3	0.4	0.6	—	*1*	*5*	*4*	*2*
Lime		..	..	0.1	0.2	0.2	..	..	*5*	*4*	*4*
Gypsum		—	—	—	0.1	0.1	—	—	*5*	*3*	*4*
Sawn timber	Million m³	..	..	0.1	0.3	0.8	..	..	—	*1*	*1*
Soft roofing	Million m²	—	—	2.8	4.9	7.8	—	—	*2*	*2*	*2*
Window glass		..	2	2.2	1.1	5.7	..	*1*	*5*	*1*	*6*
Floor tiles		—	—	—	—	0.1	—	—	—	*1*	*2*
Bricks (baked)	Billion	..	..	0.5	0.5	1.2	..	..	*7*	*5*	*6*
Asbestos cement pipes	1,000 standard kms.	—	—	—	0.8	1.3	—	—	—	*24*	*11*
Other producer goods :											
Steel	Million tons	—	—	—	0.1	0.2	—	—	—	—	—
Mineral fertilizers		—	—	—	0.5	0.6	—	—	—	*10*	*7*
Machine tools	Thousand	—	—	0.1	0.7	1.3	—	—	—	*1*	*1*
Tractor-drawn seed drills [a]		—	—	1	5	8	—	—	*2*	*4*	*6*
Tractor drawn cultivators [a]		—	—	2	8	8	—	—	*6*	*8*	*7*
Cotton pickers [a]		—	—	—	5	1	—	—	—	*98*	*100*
Spinning machinery		—	—	—	1	1	—	—	—	*44*	*60*
Total engineering and metal-working (*1955 = 100*)	Index	1 [b]	1	9	52	100	*1* [b]	*1*	*1*	*1*	*1*
Food products :											
Flour	Million tons	..	..	..	..	2.2	..	..	..	..	*7*
Granulated sugar	Thousand tons	—	—	66	124	75	—	—	*3*	*5*	*2*
Meat		..	..	59	69	137	..	..	*4*	*4*	*5*
Fish and sea food		31	17	32	32	39	*3*	*2*	*2*	*2*	*1*
Butter		..	..	3	6	9	..	..	*1*	*2*	*2*
Confectionery		..	..	23	25	49	..	..	*3*	*2*	*3*
Vegetable oils		40 [b]	75	161	180	297	*8* [b]	*17*	*20*	*22*	*25*
Tinned food	Million tins	—	3 [b]	62	134	196	—	*2* [b]	*6*	*9*	*6*
Wine	Million litres	..	..	26	22	35	..	..	*13*	*9*	*7*
Champagne	Million bottles	—	—	—	1	1	—	—	—	*7*	*5*
Other consumers' goods :											
Ginned cotton	Million tons	0.2	0.2	0.7	0.8	1.3	*88*	*86*	*82*	*85*	*85*
Cotton yarn	Thousand tons	..	..	16	27	41	..	..	*2*	*4*	*4*
Clean wool		..	..	14	15	19	..	..	*23*	*16*	*12*
Raw silk		..	..	1	1	1	..	..	*65*	*66*	*60*
Paper		—	—	2	5	6	—	—	—	—	—
Cotton cloth	Million metres	—	—	117	189	278	—	—	*3*	*5*	*5*
Woollen cloth		—	—	—	1	1	—	—	—	—	—
Silk cloth		—	—	6	16	38	—	—	*8*	*12*	*7*
Knitted underwear	Million units	—	—	4	13	18	—	—	*3*	*9*	*5*
Knitted outerwear		—	—	1	1	2	—	—	*2*	*3*	*2*
Hosiery	Million pairs	..	..	10	13	22	..	..	*2*	*3*	*3*
Leather footwear		—	—	5	6	10	—	—	*2*	*3*	*3*
Rubber footwear		—	—	—	0.9	0.3	—	—	—	*1*	—

Source : See separate Appendix.

[a] Data were available only for the Uzbek S.S.R., and it was assumed that there was no production in the other three republics.

[b] Data were available only for the Uzbek S.S.R., and an estimate was made of output in the rest of central Asia.

4. Living Standards in Central Asia

The analysis in the preceding sections shows that, although a very considerable industrial development has been undertaken during the Soviet period, the central Asian economy is still heavily dependent on primary production and the difference in degree of industrialization between this region and the rest of the Soviet Union has, if anything, widened in the post-war years. In order to evaluate the economic policy carried out in central Asia in its right perspective it would be necessary to know whether this lag in industrialization has been accompanied by a lag in living standards, or whether the development of primary production has been so remunerative that living standards have nevertheless improved at the same rate as in the rest of the Soviet Union.

Unfortunately, the scattered information available is insufficient for estimating how the rate of rise in living standards in central Asia has compared with that in the rest of the Soviet Union, but the recently published abstract of retail trade statistics gives some data on present (i.e., 1955) living standards in central Asia and their relationship to those of other regions of the Soviet Union.

The statistics of retail sales show that in 1955 the value of turnover per head in state and co-operative shops was 25 per cent lower in central Asia than in the Soviet Union as a whole. So summary a figure, however, is of limited significance: first because it excludes farm market sales (for which no breakdown by republics is available); secondly, because farmers, who produce part of their own food, account for a larger share of the population in central Asia than in the Soviet Union at large; and finally, because there is no information on the extent to which farmers in central Asia get their supplies of imported cereals through the retail shops. It is more revealing, therefore, to compare the purchases in the various regions of those consumers' goods which are not produced on farms and sold at farm markets and which do not substitute directly for such products. Such a comparison (Table 11) shows that the rouble value of per capita consumption of industrial consumers' goods in central Asia is about 22 per cent below the all-Union average, but with a difference of 13 per cent only for textiles,[29] and with differences of 30 per cent or more for luxury or semi-luxury products such as confectionery, tobacco, radios, toys, etc.

In evaluating the outlays in roubles shown in the table, it must be remembered that they include the turnover tax, which is very high for some of the items specified. For textiles the real difference in consumption per head between central Asia and the Union average is somewhat larger than that shown by the turnover in terms of rouble values, because a large share of total sales in central Asia takes place in rural shops, where there is a surcharge of some 10 per cent

Table 11

Retail sales of selected industrial goods in central Asia in 1955

	In roubles per capita	As percentage of per capita sales in the Soviet Union
Food not directly produced on farms:		
Sugar	56	*54*
Confectionery	71	*68*
Tea	57	*452*
Other foodstuffs [a]	250	*60*
Tobacco	41	*67*
	475	*68*
Clothing and footwear:		
Cloth	308	*135*
Manufactured clothing	162	*56*
Footwear	92	*76*
Haberdashery	38	*73*
	600	*87*
Durable consumers' goods:		
Bicycles and motor-cycles	10	*80*
Radios	10	*70*
Sewing machines	4	*80*
Clocks	14	*80*
Furniture	24	*70*
	62	*76*
Other goods:		
Soap and perfumes	26	*81*
Cutlery, glassware, china	34	*97*
Toys, sportswear, musical instruments	11	*60*
Books, other printed matter and stationery	35	*74*
	106	*80*
Total of consumers' goods listed above	1 243	*78*
Building materials	57	*124*
Other and unspecified [b]	120	*94*
Total of products listed	1 420	*80*

Sources: Sovetskaya Torgovlya, 1956.

[a] Include vitamins, mushrooms, soya beans and certain other unspecified foodstuffs.

[b] Non-food items only.

[29] The high income elasticity which characterizes textile demand in western Europe is not paralleled in central Asia, where textiles are more of a necessity type unaffected by fashion, etc.

on textile prices.[30] On the other hand, the larger proportion of children in the central Asian population tends to make the comparison of sales a little too unfavourable to this region, particularly with regard to those products which are not used by children.

The Relation between Living Standards and the Degree of Industrialization

It was only to be expected that standards of consumption in a less industrialized area such as central Asia would be below the average for the country as a whole. The next question that arises is whether living standards in the central Asian republics compare favourably or unfavourably with those of other regions of the Soviet Union with a similar degree of industrialization. As far as the consumption of goods other than food is concerned, this question can be answered with a fair degree of certainty on the basis of the recently published statistics of retail sales. At the same time, these statistics make it possible to estimate broadly the over-all gap (for non-food items only) between levels of consumption for the agricultural and the non-agricultural population. The method used (see Charts 1 and 2) is to compare per capita sales of non-food items in each area with indicators of the relative importance of agricultural and non-agricultural activities. Two such indicators are available: the relative number of wage- and salary-earners and the share of total population living in towns and other urban communities. The first of these indicators (used in Chart 1) is most suitable for the purpose at hand; but, unfortunately, only republican totals (and totals for each of the nine major regions of the R.S.F.S.R.) are available. The second indicator, used in Chart 2, is available for each oblast separately — that is, for some 150 geographical subdivisions.

There are two main features to note in these scatter diagrams: first, there appears to be a strikingly close positive correlation between the degree of industrialization and per capita outlays on consumers' goods other than food. In fact, per capita consumption of these goods varies from less than 600 roubles in the most rural districts to more than 2,000 roubles in some districts where the non-agricultural population is a particularly large part of the total. The linear regression curve fitted to the points in Chart 2 (which gives the most detailed information) suggests that in the Soviet Union as a whole urban purchases per head of non-food products are three times as high as rural purchases per head. In absolute figures, these purchases would appear to be, on the average, 500 to 550 roubles per head for the agricultural population and between 1,700 and 1,800 roubles for the non-agricultural population.[31] In Chart 1, four republics can be clearly distinguished as falling outside the general pattern — namely, the three cotton-growing republics of central Asia (Uzbekistan, Tadzhikistan and Turkmenia) and, in addition, Georgia. In these four republics, living standards, as measured by per capita consumption of non-food products, are distinctly higher (by some 15 to 20 per cent) than what would have been expected in view of the relatively low share of wage- and salary-earners in their total populations. It is also seen that the fourth of the central Asian republics, Kirgizia, where little cotton is grown, conforms to the general pattern: its living standards appear to be as low as those in other parts of the Soviet Union where the degree of industrialization is correspondingly low. This tendency is also discernible, though less clearly, in Chart 2.[32]

It can thus be concluded with a high degree of certainty that the specialization in cotton growing in central Asia results in a level of agricultural incomes which, although much lower than urban incomes, is considerably closer to them than in other regions of the Soviet Union. It is highly unlikely that the explanation is to be found in a relatively high level of urban incomes in the three central Asian republics. The available information about retail sales in urban

[30] The rural surcharge, ostensibly to cover extra transport and handling costs, varies by product (that for textiles being the highest); some Soviet economists have recently called for its abolition.

[31] The administrative districts used in the chart are so large that purchases made by the inhabitants of one district in another cannot significantly affect this conclusion.

[32] The reason why in Chart 2 central Asian oblasts exhibit a less clear tendency for sales of non-food items to be relatively high is to be found in the particular demographic situation in central Asia. Owing to the larger share of children in the population—and probably also to a lower participation of women in urban economic activities—any given level of income *per income earner* results in a lower level of income (and hence purchases) *per inhabitant* than in the rest of the Soviet Union. In Chart 1, on the other hand, where sales are compared with the share of wage- and salary-earners, the picture is not disturbed by this demographic fact, since the higher share of children (and the lower share of working women) lowers the percentage of wage- and salary-earners, as well as sales per head.

The quantitative importance of the difference in the demographic situation just mentioned can be gauged by comparing, for various regions, the numbers of wage- and salary-earners with the numbers of the urban population. Since the Soviet legal definition of an urban settlement makes non-agricultural and urban occupations broadly synonymous, and since practically all economically active persons outside agriculture are wage- or salary-earners, a fairly stable relationship between the two figures would be expected, except in so far as the relative number of dependants (including non-working women of working age) varies from one region to the other. As seen from the figures below, the relative number of wage- and salary-earners in central Asia (and in the Transcaucasian republics) is far below the average for other parts of the Soviet Union:

All Wage- and Salary-earners as percentage of Total Urban Population, 1956

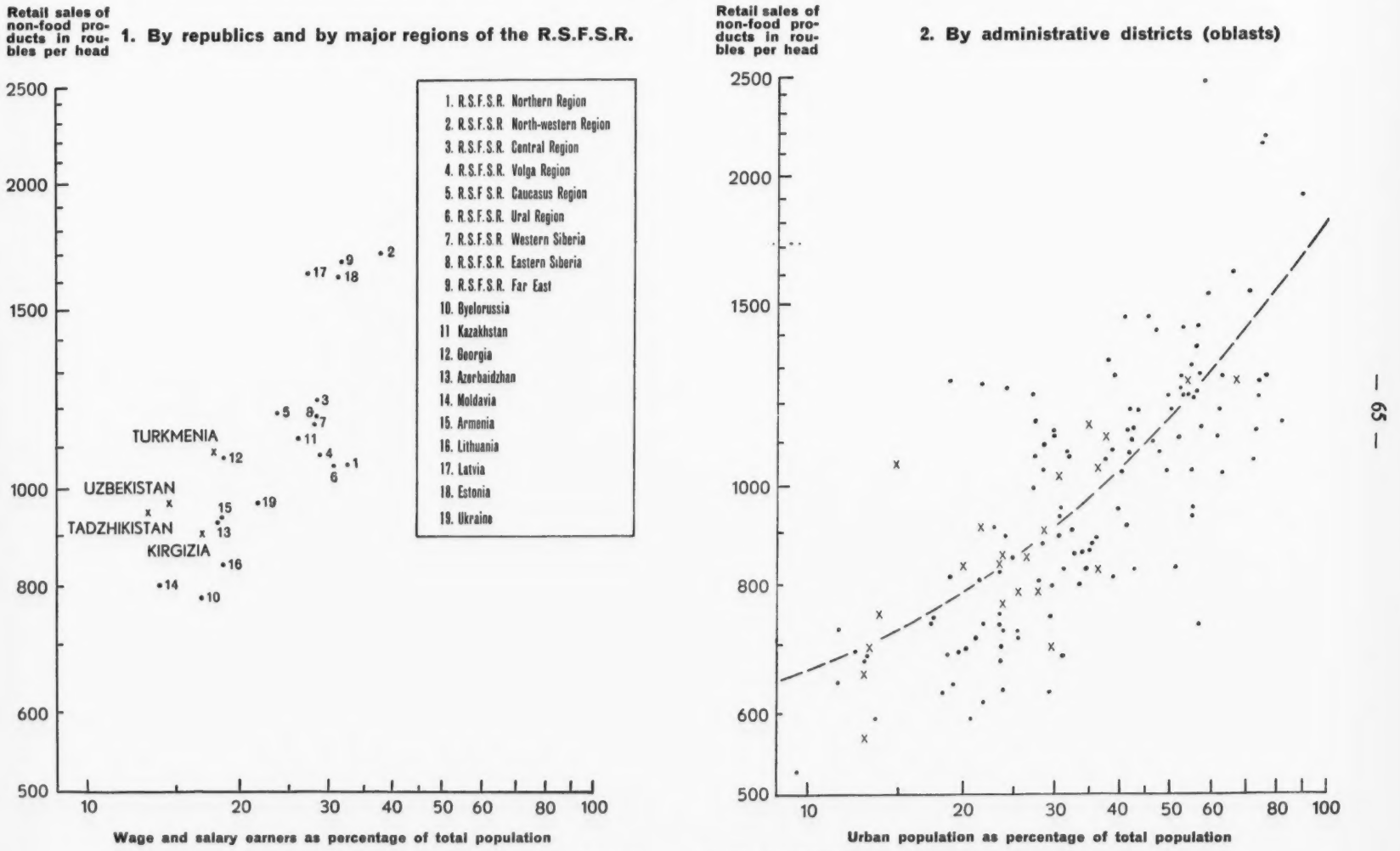
Four central Asian republics	49
Three Transcaucasian republics	45
Asian part of R.S.F.S.R. and Kazakhstan	62
European part of R.S.F.S.R.	64
Other republics in the European part	59
U.S.S.R.	60

CHARTS 1 and 2

CHARTS 1 and 2

Indicators of the relationship between consumption of commodities other than food and the degree of urbanization in the Soviet Union in 1955

Double logarithmic scale



X Relating to administrative districts in central Asia.

• Relating to administrative districts outside central Asia.

Sources: See separate Appendix.

NOTE. — The equation of the regression line shown in chart 2, derived by the method of least squares, is $y = 1277\,x + 531$, with a correlation coefficient of .72

TABLE 12

Per capita retail purchases of food (including drink) in larger Soviet towns, 1955

	Moscow	Leningrad	10 republican capitals	16 other large towns	4 central Asian capitals
Actual money expenditure in state and co-operative shops and farm markets:					
Roubles per head	5 468	4 003	3 652	3 175	3 182
Index: Average of 10 republican capitals = 100	*150*	*110*	*100*	*87*	*87*
Of which in farm markets:					
Roubles per head	459	294	962	743	939
Percentage of total	*8.4*	*7.3*	*26.3*	*23.4*	*29.5*
Derived price level of purchases in farm markets:					
Average price level in farm markets of 39 towns = 100	87	103	93	103 [a]	148
Average food prices in state and co-operative shops = 100	152	180	163	180	259
Volume of purchases in terms of derived food prices in state and co-operative shops:					
Farm market sales (roubles per head)	302	163	590	413	363
Total of shops and farm markets:					
Roubles per head	5 311	3 872	3 280	2 845	2 606
Index: Average for 10 republican capitals = 100	*162*	*118*	*100*	*87*	*79*

Sources: *Sovetskaya Torgovlya*, 1956. For details, see separate Appendix.

[a] Average for 23 large towns.

districts in central Asia indicates, on the contrary, that these are relatively low.[33]

Urban Consumption Standards

In order to arrive at meaningful comparisons between urban sales in central Asia and in other Soviet towns, food and non-food items must be considered separately, and statistics for food sales must include both sales from state and co-operative shops and sales in the farm markets. Such information is available only for the four central Asian capital cities, Tashkent, Stalinabad, Ashkhabad and Frunze.

Average sales of non-food products in these four towns in 1955 amounted to 1,979 roubles per inhabitant, against an average of 964 roubles for the four republics as a whole. This figure for the central Asian capitals is 10 per cent below per capita expenditure on non-food products in other republican capitals, and less than half that of Moscow.

The comparison of food sales is more difficult, partly because of differences in the scope of auto-consumption of produce from private plots and gardens, and partly because of regional differences in food prices. For the latter factor, however, a reasonably reliable adjustment can be made, as shown in Table 12. It appears that a larger share of the money spent on food in central Asian towns than in other Soviet towns is spent in the farm markets, where prices are generally much higher than in the state and co-operative shops (although the gap has narrowed somewhat since 1955). Moreover, prices in the farm markets seem to have been higher in central Asia than elsewhere in the Soviet Union. While money expenditure on food per head in central Asian capitals was 13 per cent below that of other republican capitals and 40 per cent below that of Moscow, the volume in comparable prices can be estimated to be some 20 per cent below that of other republican capitals and half that of Moscow. The differences between the central Asian capitals and other republican capitals are thus considerably larger for food purchases than for industrial goods. This may be due partly to unsatisfactory supplies and partly to more food being grown in private gardens in central Asian towns than elsewhere in the Soviet Union; but it is also possible that the real difference in urban purchases of non-food products is larger than the 10 per cent quoted above, because purchases made by farmers in the towns may be relatively more important in central Asia, where the difference between urban and rural incomes per head is smaller than elsewhere.

The differences in consumption standards mentioned above correspond fairly well to what could be expected from available information on wages and salaries. Money wages in industry in central Asia are the same as elsewhere in the Soviet Union for comparable work, but a larger share of the industrial workers in central Asia are unskilled or belong to light industries which normally pay less than heavy industry, of which there is relatively little in central

[33] In Georgia, by contrast, the relatively high level of per capita sales seems to be due to particularly high sales in the towns.

Asia. In addition, there are more dependants per active worker in central Asia and, therefore, as already noted, somewhat larger differences in consumption standards per head than in earnings per worker. On the other hand, in central Asia a 30 per cent addition to salaries is paid to many higher officials, technicians, etc., as compensation for employment in a remote part of the country.

Since most of these officials, etc., probably live in the republican capitals, it is likely that the living standards in other central Asian towns for which no data are available fall even further short of living standards in other parts of the Soviet Union than do the standards of the republican capitals. Although the number of high salary earners may not be very large the salary differentials are so large (top salaries may exceed 10 times those of the average town dweller) that the 30 per cent additions to these salaries may exert a significant influence on the averages.[34]

While the typical earnings in central Asian industry seem to be around 7,000 roubles a year, the statistics for cotton farms quoted in the previous section indicate that cotton producers in 1953 obtained money incomes varying between individual farms from 2,000 to 10,000 roubles. To this should be added supplies in kind of produce raised in the collective farms as well as income, both in money and kind, from private plots (which in many cases may give considerably more than the income from the collective farm). However, these figures relate to cotton farms only, and income in other sectors of agriculture must be considerably smaller. It is clearly not possible to deduce any figures for average rural incomes from this information, but there can be no doubt that the total income in money and kind earned by the members of the high-yielding cotton farms is much higher than that earned by industrial workers, while the incomes earned in the low-yielding cotton farms and in the ordinary cereal and livestock producing farms fall far short of incomes earned in industry.

Housing Standards

Statistics of money earnings and retail sales fail to account for some important items of consumption, among them dwelling space. The housing standard in any particular region is limited not by the ability of the population to pay the very cheap subsidized rents (1.32 roubles a month per square metre) but by the number and quality of dwellings available. Table 13 shows that the floor space available per inhabitant in the central Asian capitals — 6 m² per head — is lower than in other capital cities of the Soviet Union, and just as insufficient as thirty years ago. There does not seem to have been any net increase in housing space per inhabitant in other central Asian towns either since 1940: post-war construction of urban dwellings has amounted to 7 to 8 m² per additional inhabitant,[35] while the dwelling space available per inhabitant in 1956 was 6.0 m². Thus, if allowance is made for the elimination of old houses, there would appear to have been no net increase in dwelling space per inhabitant. Most of the stock of urban dwellings in central Asia — as well as virtually all rural dwellings — are low-cost structures of unbaked brick

TABLE 13

Building activity and dwelling space available in central Asia

	Units	Ratio to the Soviet Union (percentages)
Urban dwelling space available (in m² per head):		
1926	6.3 [a]	77 [b]
1956	6.0 [a]	77 [b]
Dwelling space constructed (in m² per head):		
1946 to 1950: Urban	1.6	98
Rural [c]	1.3	135
Total	1.4	114
1951 to 1955: Urban	1.8	97
Rural [c]	1.4	172
Total	1.5	122
Dwelling space constructed per additional inhabitant during 1940 to 1955:		
1946 to 1955: Urban	7.4	73
Rural [c]	104.5	.. [e]
Total	20.0	26
Share of urban dwellings in public investments [d] (percentages):		
1946 to 1950	34	98
1951 to 1955	25	94
Workers in the building industry (per 1,000 inhabitants):		
1940	6.7	82
1950	7.2	51
1955	9.2	57

Sources: *Narodnoe Khozyaistvo S.S.S.R. v 1956 godu*, 1957, pp. 178 and 205 and direct communication from the Soviet Government.

[a] Average of four central Asian capitals only.

[b] Average of central Asian capitals as percentage of average for Moscow and other republican capitals (apart from those of the Baltic states and Moldavia for which no 1926 figures are available).

[c] Assuming an average of 40 m² per rural dwelling.

[d] Assuming building costs to be 1,000 roubles per m².

[e] The rural population declined by 15 per cent over the period.

[34] Non-food sales per head in 1955 were 4,212 roubles in Moscow, 2,457 roubles in Leningrad and 2,182 roubles in republican capitals outside central Asia, while the average for other big towns (11 towns of around half a million inhabitants each) was 1,785 roubles only. These large differences can hardly be explained in any other way than by the presence of more high-salary earners in the administrative centres.

[35] It is probable that construction of dwellings during the war was small.

(excavated and dried at site) which have a much shorter life than houses of baked brick. The difference between current production of dwellings and net additions to the stock is therefore larger in central Asia than elsewhere.

The unsatisfactory housing situation in the towns is of course a result primarily of the very rapid increase in the town population; owing to the much lower rate of increase in the rural population, the addition to the housing stock, although smaller per head of the total rural population, is many times larger per additional rural inhabitant. Even though nearly all rural houses built are of the short-lived unbaked-brick type, it can safely be concluded that a definite improvement has taken place in rural housing conditions.

Not only in housing, but also in other social capital, central Asia falls somewhat behind the standards reached in the Soviet Union as a whole. For most types of social investment the number of units per capita is generally two-thirds of the U.S.S.R. average; cinema attendance per head is half the U.S.S.R. average.[36]

Some light on the distribution of incomes is thrown by data on savings bank deposits. The average balance per depositor has been fairly close to the Soviet average (94 per cent thereof in 1935, 98 per cent in 1950, 88 per cent in 1956), but the number of depositors per thousand of population is much lower (68, 59 and 60 per cent for the same years). There are thus proportionately fewer depositors in central Asia, and the gap is widening; but those who can or do save have only a slightly smaller balance than elsewhere. In recent years the rate of new savings has borne the same proportion to the Soviet average as the size of balance; but during the war there were net withdrawals, while deposits elsewhere rose slightly, and in the early post-war years the rate of visible saving was behind the national average.

Regional Disparities in the Soviet Union

It may be concluded from the above analysis that, although average incomes per collective farmer in central Asia are not unlikely to be higher than in the rest of the Soviet Union, average living standards for the region as a whole are probably one-fifth to one-fourth lower than the Soviet average, partly because there are more children per family, partly because urban incomes fall behind those in the rest of the Union and partly because the urban population accounts for a much smaller share of total population. This regional disparity in living standards cannot be regarded as large compared with those found in other countries. There is hardly any European country without regions where per capita income or consumption is one-fifth or more below the national average, and in most European countries there are regions which fall more than one-third behind the average income of the country. In many overseas countries the regional gaps are probably still larger. By contrast, the regional inequality of income in the Soviet Union seems large if the comparison is between the capital towns on the one hand and the country average or the average for the less developed regions on the other. In fact, per capita retail sales of non-food items in Moscow are more than 3½ times the Union average and nearly 4½ times the central Asian average. This is probably a much wider discrepancy than that between metropolitan incomes and country wide averages in western European countries.[37] However, the dominating gap in income levels is not between geographic territories, but between agriculture on the one hand and the urban sectors on the other. It has been seen that this gap, though still large, is less pronounced in central Asia than in most other parts of the Soviet Union.

The conclusion that average living standards in central Asia are only one-fifth to one-fourth below those of the Soviet Union as a whole is tantamount to saying that they are on much higher levels than those in the neighbouring Asian countries, and that they have improved very considerably in the three decades since the end of the civil war. This statement remains true even though there are certain fields, such as dwelling space per head in towns and per capita consumption of animal food, where there has been very little change in quantity, although some improvement in quality, during the period of Soviet rule.

Since the population of European origin is highly concentrated in the towns, where, as seen above, living standards are considerably above those of the rural population, there can be no doubt that on average the non-Asians living in the region are better off than people of local nationalities. Remembering, however, the very high incomes in money and kind earned in the good cotton farms, it would seem that a minority of the Asian population (including also some intellectuals and higher officials in the towns) enjoy higher standards than the average European, either in central Asia or in the Soviet Union as a whole, while the living standards of the majority of the Asian population fall significantly short of the average for the Europeans.

[36] Numbers of cinemas, theatres, museums, libraries and orphanages fall between 60 and 70 per cent of the average; numbers of schools, colleges, shops, club-houses and hospital beds fall between 80 and 90 per cent. Children's crèches, especially temporary harvest-time nurseries, are above, and children's holiday camps are well below the national average. Standards of health and education are dealt with in section 6, below.

[37] Purchases in Moscow made by people not living there could however affect the comparison: in 1954 there were half a million daily visitors to Moscow, which has 6 million residents. (*Planovoe Khozyaistvo*, No. 1, 1955, p. 84.)

5. Investment and Terms of Trade

The Level and Distribution of Investment

State investment in central Asia has for thirty years been planned by the State Planning Commission. Investment decisions have lain with the Union government either through the ministry concerned (in the case of important industries and major projects) or through the local republican governments (in the case of small concerns). Between 1955 and 1957 responsibility for allocating investment in both productive and social capital was increasingly transferred to the republican councils of ministers. The reorganization of industry and building management in mid-1957 placed these decisions in the hands of the new regional councils but, by retaining control of turnover taxes, profits and prices, the Union Government continues effectively to direct the inter-regional flow of capital.

During all this period, in central Asia as elsewhere in the Soviet Union, a high share of national income has been devoted to investment. The figures given below show that state investment per head has generally been around two-thirds of the Soviet average.

State Investment in Central Asia

Average of years	*Roubles per head in 1955 prices* [a]	*As percentage of state investment per head in the Soviet Union*
1928–32 . . .	66	*79*
1933–37 . . .	111	*72*
1938–40 . . .	143	*68*
1941–45 . . .	115	*66*
1946–50 . . .	210-247	*58-68*
1951–55 . . .	401-428	*61-65*

Source : Direct communication.

[a] A range is quoted where population interpolation is subject to a wide margin of error.

The scattered information which is available about investments made by collective farms in central Asia indicates, on the other hand, that these are on considerably higher levels than elsewhere in the Soviet Union, perhaps as much as one-third or even one-half of state investments,[38] against 10 per cent for the Soviet Union as a whole. It may well be, therefore, that total investment per head in central Asia is about four-fifths of the Union average, in which case the ratio of investment to consumption would appear to be the same in central Asia as in the Soviet Union as a whole. Nevertheless, even such a high rate of investment in central Asia may be insufficient to prevent the region from falling farther behind other parts of the Soviet Union in the degree of industrialization. The reason for this is that the very high rate of population increase requires large amounts of "demographic" investment, in productive as well as in social capital, solely in order to prevent a decline in the stock of capital per head. The higher the share of such "infrastructure" investments, the smaller is the part investible in industrial development.

Unless the regional distribution of investment within the Soviet Union becomes more favourable to central Asia in the next decades it will not be possible both to provide productive employment for the large number of children who will reach working age and to prevent a further lag in productivity and income in relation to the all-Union averages. In spite of the high level of investment reached already, central Asia thus faces the same problem as most underdeveloped regions: because of the high rate of increase of its population the possibilities for rapid progress in the next decades depend to a large extent on whether the region can obtain either a substantial improvement in its terms of trade or a substantial amount of external capital aid.

The Terms of Trade of Central Asia

To pass any judgement on the prospects for improvement in the terms of trade of central Asia or for additional capital imports, it is obviously necessary first to examine the present terms of trade and capital flows. There is, unfortunately, extremely little information available on the former and nothing on the latter.

The terms of trade of central Asia in its trade with the other parts of the Soviet Union are determined primarily by the ratio of the price obtained for its predominant export product — cotton — to the prices paid for its main supplies from outside, which consist mainly of cereals, capital goods and some consumer durables. The terms of trade are of course also influenced by the prices central Asia pays for the services (including defence) which it obtains from the central administration.

The ratio of the price of cotton to that of wheat is of particular interest because, as early as the 'twenties, it seems to have been used as a regulator of agricultural incomes in central Asia. During the civil war the acute food shortage in central Asia had reduced the price of seed cotton in terms of wheat from the usual level of 3 : 1 to less than 2 : 1, as can be seen from the following figures:

[38] E.g., 42 per cent in Uzbekistan in 1955.

Ratio of Cotton Prices to those of Equal Quantities of Wheat and Steel

Ratio of:	Central Asia	United States
Seed cotton to wheat:		
1927–28	1.9	3.0
1950–51	1.8 – 2.0	3.8
1954–56	1.8 – 2.0	3.3
Cotton fibre to steel:		
1927–28	8.8	7.6
1950–51	..	8.6
1954–56	16.7	6.0

NOTE. — The price of cotton fibre is normally some 3 times that of seed cotton both inside and outside the Soviet Union.

In order to encourage cotton production, wheat was nevertheless delivered to cotton farmers in exchange for cotton in the ratio of 3 to 1, a measure which made it necessary to pay very large subsidies for the wheat delivered to central Asia. This system was applied until 1935, when, concurrently with the introduction of the premium system for cotton mentioned above, the subsidies to imported wheat were apparently abolished. During and after the Second World War cotton prices once more lagged behind the increase in the general price level, but it is not known whether this brought with it a deterioration in the terms of trade of central Asia or whether a system of subsidies to the prices of cereals was again introduced. In any case, cotton prices were doubled in 1949, and — if the price of rice is any guide — this move was again accompanied by a large increase in the price of grain.[39] In 1953 the average price paid per ton of seed cotton to Uzbek farmers was about 3,000 roubles per ton and in this and the following years wheat was apparently delivered to cotton farmers at 1,500 to 1,700 roubles per ton,[40] implying that the ratio continues to be much less favourable to cotton than the ratio in the United States (viz. broadly typical of world market pricing) and similar to what it had been before the introduction of the cotton premium system in the 'thirties.[41]

It would be rash, however, to conclude from this that the present terms of trade are unfavourable to central Asia, because a comparison between cotton and steel prices gives exactly the opposite result to that obtained for the ratio of cotton to wheat prices. While in the United States cotton prices have declined in terms of steel prices, they have increased very sharply in the Soviet Union, where one kilogramme of cotton now buys more than 16 kilogrammes of steel, against 6 kilogrammes in the United States. A change in the same direction, although smaller, has taken place in the ratio of cotton fibre to steel manufactures such as machinery and consumer durables. But in contrast, import prices of certain other consumers' goods, such as tea — an important article in central Asian household budgets — are much higher in terms of cotton than in western countries.

In the absence of any trade figures which could weight these prices, and in the absence of adequate information on the central Asian payments for central services, it is not possible to assess the evolution over time of the region's terms of trade, or to compare the price ratios in its trade with the corresponding price relationships ruling in the world market.

It is of course necessary in passing judgement on the movement of price relationships to take into consideration the changes which may have taken place in the ratio of productivity in cotton production to that in other sectors. In the Soviet Union productivity per unit of land has improved much more for cotton than for cereals, but it is by no means certain that this has been the case also for productivity per unit of input of labour and materials (in particular fertilizer). Nevertheless, it is conceivable that the changes in the ratio of cotton to grain prices correspond roughly to changes in relative costs but, on the other hand, it is fairly clear that both the present ratio of cotton prices to prices of steel and steel manufactures, and the changes in that ratio, are completely out of line with relative costs, and much too favourable to cotton.

[39] Very substantial increases took place in the procurement prices of most agricultural produce between 1953 and 1955 as the following data (communicated directly by the Soviet Government) indicate:

Range of Procurement Prices paid to Central Asian Farms [a]
(Roubles per ton)

	1948		1955	
	Minimum	Maximum	Minimum	Maximum
Seed cotton	805	2 675	800	4 280
Wool (greasy)	1 300	17 800	1 400	27 200
Astrakhan lambskin (each)	5	120	5	120
Rough rice	202	202	1 450	3 000
Cattle (live weight)	167	350	1 500	4 100
Sheep, goats (live weight)	217	360	1 500	4 100
Milk	150	150	550	1 200
Beetroot	54	90	100	250

[a] Except for Kirgizia in 1948, when minima were higher for wool and lower for rice and livestock.

[40] The average cotton and grain prices were inferred from data in *Materialy nauchno-proizvodstvennoi konferentsii, posvyashchennoi voprosam dalneishego podyoma ekonomiki khlopkoseyushchikh kolkhozov Uzbekistana*, Tashkent, 1956, pp. 36, 38 and 42, and from information gained by members of the secretariat on a visit to central Asia.

[41] It is not known whether the adjustment of the cotton price in 1956 in connexion with the revision of the premium system was linked to any change in the price of cereals. It is known, however, that as late as the spring of 1957—i.e., after the 1956 adjustment of the cotton price had taken place, the central Asian cotton mills paid about 7,000 roubles per ton of fibre (information supplied to the secretariat on a visit to central Asia). This seems to be fairly low compared with the average price for seed cotton in 1953, quoted above, and seems, therefore, to imply that the most recent adjustment mainly consisted in an increase in the basic price, counterbalanced by a downward adjustment of the premia. There may thus have been no need for changes in the prices of cereals on that occasion.

If the relatively high incomes earned in central Asian cotton production are due not to relatively high productivity but to more favourable prices than those paid for other products, the position of central Asia is of course inherently weak. The willingness of the Soviet authorities to pay high prices for central Asian cotton has been due to the desire to avoid cotton imports and to the absence of cheap substitutes for cotton. However, the development of the production of artificial fibres reduces dependence on cotton in the Soviet Union as well as elsewhere, and the desire to increase trade with Middle Eastern cotton-growing countries has already brought some change in the Soviet attitude towards imports of cotton.[42] In any case, it does not seem likely that future changes in the terms of trade between central Asia and the rest of the Soviet Union will be in favour of cotton. Any deterioration would add to central Asian needs of capital from the rest of the Soviet Union, to permit a more rapid industrialization and a consequent reduction of cotton-growing manpower, which in turn would permit a reduction of production costs without any decline in rural per capita incomes.

[42] E.g., from Egypt, Syria and the Sudan.

6. Investment in Man

The analysis of living standards and investment in the previous sections was limited to private consumption and to investment in physical assets. The picture would, however, remain incomplete without a discussion of the very impressive investments in the bodies and minds of men, that is in health and education. In these fields the standards in central Asia have improved so strikingly in the period of Soviet rule that the relevant comparison is no longer with neighbouring Asian countries, but with the countries of western Europe.

Both before the war (in 1940) and in the post-war years the personnel occupied in medical and educational services in central Asia accounted for no less than 17-20 per cent of the active population outside agriculture. The comparable figure for India is about 3 per cent. In contrast with other state investment which, as mentioned above, has been below the Soviet average, expenditure on health and education has rather tended to be higher. In the 'thirties (during the second Five-year Plan, 1932-37) education and health expenditure per head [43] in central Asia was about one-fifth higher than the average for the U.S.S.R. In the Fifth Five-year Plan (1951-55) per capita spending on social-cultural measures was about the same in central Asia as in the Soviet Union as a whole. In this period such expenditure in central Asia was 1½ times that of total state investment in physical assets within the region.

The improvement in medical services obtained by this expenditure can be gauged from Table 14. The number of physicians per thousand inhabitants, which before the revolution had been much lower than it is in the neighbouring Asian countries today, now equals that of the western European countries, and the number of hospital beds per thousand inhabitants is five to fifty times higher than in Asian countries and more than half that of the advanced western European countries. This, together with higher food consumption, has contributed to the decline in mortality to levels which — even when account is taken of the favourable age-distribution and of some under-registration of deaths — must be characterized as highly satisfactory by any standard.[44]

[44] See Table 4.

[43] Or more precisely social and cultural expenditure, of which education and health at the time represented the same share (96 to 97 per cent) in the central Asian as in the all-Union accounts; at present (1957 budgets) a higher percentage is for education and health in the central Asian republics (90 per cent) than in the all-Union budget (62 per cent), the difference being attributable to the payment of most social security expenditure through the all-Union accounts.

Table 14

Medical services

Number per thousand inhabitants

Country		Physicians [a]	Hospital beds
Central Asia	1913	0.03	0.2
	1940	0.5	3.2
	1955	1.2	5.7
Soviet Union	1913	0.2	1.3
	1940	0.8	4.1
	1955	1.7	6.5
Burma	1952	0.1	0.5
India	1953	0.2	0.4
Pakistan	1954	0.1	..
Afghanistan	1954	0.01	0.1
Iran	1952	0.2	0.4
Iraq	1954	0.2	1.1
Italy	1951	1.4	7.4
France	1954	1.2	10.9
Western Germany	1954	2.0	10.3
United Kingdom	1954	0.8	11.3

Sources : Soviet data from *Narodnoe Khozyaistvo S.S.S.R. v 1956 godu*, 1957, pp. 272 and 274; others from national statistics.

[a] Including dentists, except for Afghanistan, Pakistan and Burma.

Progress in education has been even more spectacular. At the time of the revolution, literacy among the Asian population in central Asia was between one and two per cent.[45] Economic development as well as political consolidation required the substitution of the limited system of Islamic schooling [46] by a uniform Soviet network and the changeover was made radically. Orthographic reform went hand in hand with compulsory primary education [47] and the 1939 census already reported over two-thirds of the population aged over 9 as literate. A similar intensive effort was made to develop further education. The ancient Arab universities of Bukhara and Samarkand had languished into narrow theological seminaries and the Russian occupation had brought only a few small technical schools.[48] On the one hand local technical colleges were created — 58 were in operation by 1926, and by 1956 there were 198 — and a university was opened in each of the four capital cities and in Samarkand. In addition, local students were sent to the other universities of the Union.

As may be seen from Table 15, the current level of tuition is about the same as elsewhere in the U.S.S.R. Pupil numbers per inhabitant in primary schools are higher — reflecting the greater proportion of children of school age; and the ratios in further education shown in the table as identical are in reality somewhat lower in central Asia because of the greater share of young people in the central Asian population. In addition, there are numerous central Asian students in other Soviet institutions. Among the students in central Asia the share belonging to the local nationalities is now rapidly increasing, although the proportion is still considerably lower than the share of central Asians in total population, either in central Asia or in the Soviet Union as a whole. In 1955 central Asian nationals formed 1.16 per cent of all " scientific workers " in the Soviet Union (against an estimated 5 per cent of total population),[49] but the speed of advance (as recently as 1950 the share was 0.77 per cent) and present matriculation rates are indicative of future progress. The vogue for natural science is less pronounced in central Asia than in the U.S.S.R. at large: 48 per cent of central Asian undergraduates were in the history, philosophy and law faculties in 1955 (against 32 per cent for the Union as a whole) and 47 per cent in natural sciences (against 56 per cent).[50]

TABLE 15

Schoolchildren, students and teaching staff in 1955

Country	Number of pupils per thousand inhabitants (including part-time pupils)			Number of teachers in primary schools per thousand pupils
	Pre-school and primary	*of which:* Pre-school	Secondary school and higher education	
Central Asia [a] . .	153	8.0	45	43
Soviet Union [a] . .	122	8.6	45	45
Iran	40	—	5	34
Iraq	68	—	13	31
Afghanistan . . .	9	—	1	30
India	56	0.1	23	30
Pakistan	49	—	16	28 [b]
France	150	29.5	40	27 [c]
Western Germany .	114	—	71	39
England and Wales	108	0.5	98	33

Sources: Kulturnoe Stroitelstvo S.S.S.R., 1956; national statistics.

[a] " Primary " includes classes 1 to 7 in general educational schools.

[b] 1951.

[c] Public primary schools only, 1951/52.

Until the revolution native girls had no share in even the limited education provided. A " Russian-native " girls' school was opened in Tashkent in May 1903 with 19 Uzbek pupils, but it lasted only two years. In 1908 a school teaching girls handicrafts and bookkeeping and in 1916 a domestic school were opened, but at the time of the revolution these represented the sum total of native female education.

After the change of regime the provision of school education for girls had necessarily to go hand in hand with the elimination of *purdah*, of which the Emir of

[45] Exact statistics are not available. Illiteracy among women was almost universal so that the rate among men was correspondingly a little better than the average. In 1920 there was 11 per cent literacy among Red Army men of central Asian nationality.

[46] In what is now the Uzbek S.S.R. there were on the eve of the revolution some 4,000 Moslem schools with 50,000 pupils learning by rote a syllabus virtually confined to religion. A modernization of their methods inspired by contemporary Turkish reforms started at the beginning of this century but was regarded by the Russian government as a manifestation of nationalism (in 1910/11, 50 such schools were forced to close). By 1914/15 there were 160 Russian and " Russian-native " schools with 17,300 pupils (in addition to Moslem schools) or about 15 children, in schools of all types, per 1,000 inhabitants.

[47] The first stage of this reform (around 1930) was the replacement of Arabic script by the Latin alphabet in the manner of the Ataturk reforms in Turkey by which it was inspired. Between 1939 and 1941, however, the various languages were transferred to Cyrillic characters.

[48] An agricultural irrigation college (1902), a railway institute (1905) and two commercial schools (1907, 1913) in Tashkent, a horticultural college (1904) in Samarkand and a commercial school (1907) in Kokand.

[49] This estimate allows for nationals of central Asia resident in other regions of the Soviet Union.

[50] The tendency for students of central Asian nationalities to concentrate more on agriculture and non-technical branches is illustrated by the following figures for the percentage of pupils of central Asian nationalities in the higher educational establishments visited by the ECE secretariat: Samarkand Agricultural Institute—85 per cent, University of Samarkand—60 per cent (Uzbeks only), University of Stalinabad—73 per cent, Stalinabad Medical Institute—50 per cent, Tashkent Railway Institute—50 per cent, Tashkent Cotton Technical Institute—50 per cent (non-Russians), Chirchik Hydroelectric Technical School—50 per cent.

Bukhara had been among the strictest exponents in Islam. The main law on women's rights dates from 1928 — forbidding marriage by purchase or compulsion, polygamy and child marriage — and it was accompanied by forceful propaganda against other aspects of female servitude.[51] The extent to which these campaigns have borne fruit may be seen from the school figures quoted below. The figures for urban school attendance and for non-farm employment, while impressive in their propinquity to all-Union averages, comprise contingents of Russians and other non-Mohammedan groups. The tapering of rural school attendance by girls reaching puberty is, however, an indication of the persistence of a prejudice now little felt outside the regions of Islamic tradition.[52]

	Central Asia	*Soviet Union*
Girls as percentage of total pupils in schools in 1955:		
Urban schools Classes 1–4	48	48
„ 5–7	48	50
„ 8–10	47	58
Rural schools Classes 1–4	47	48
„ 5–7	43	48
„ 8–10	27	52
Percentage share of women in non-agricultural employment:		
1950	41	47
1955	41	48

It is a commonplace that investment in education may be largely nullified by the failure to maintain literacy by providing suitable reading matter. As can be seen from Table 16, achievements in this respect are measured by the number and circulation of books and newspapers, which are indeed impressive, although central Asia remains much behind the Soviet average. It should not be overlooked, however, that the Soviet average is a very high standard to set for educational facilities. Even falling somewhat behind the Soviet mean is tantamount to being vastly in advance of nearly all Asian countries and to comparing quite favourably with western European countries. This

TABLE 16

Mass information media in 1955

	Population	Books published		Newspapers	Cinemas
		Number of titles	Number of copies	Daily circulation	Number of visits
	Millions	Thousands	Per thousand inhabitants		
Central Asia	12.1	3.1	2 700	149 [a]	6 300 [b]
of which: Local languages	9.5 *	1.8	2 700	127 [c]	..
Soviet Union	197.6	54.7	5 100	243 [a]	12 700
Ceylon	8.6	1.1	..	36	..
Iran	21.8	0.8	..	6	..
Turkey	24.1	3.3	..	32	..
Hungary	9.8	2.7	..	124	11 800
Czechoslovakia	13.1	4.4	..	191	12 400
Portugal	8.8	4.8	..	61	2 800
Netherlands	10.8	7.4	..	259	6 100
Sweden	7.3	4.8	..	459	9 400

Sources: Soviet data from direct communication and *Pechat S.S.S.R.*, 1954; other countries from *Statistical Yearbook*, United Nations, New York.

[a] Includes newspapers published less frequently than once a day: this inclusion reduced for the Soviet Union the average number of issues of each newspaper to 131 a year instead of about 310 (the normal for a daily paper). In 1954 there were 391 dailies among the 7,108 newspapers of all periodicities.

[b] In cinemas of the Ministry of Culture, which for the Soviet Union as a whole represented 73 per cent of attendances.

[c] 1954.

favourable comparison is valid not only for information media, but also for numbers of pupils beyond the primary stages (including part-time students) in central Asia and in France, western Germany and the United Kingdom.

Number of Students per Thousand Inhabitants

	Central Asia [a]	*Soviet Union* [a]
General secondary	28.5	26.1
Vocational secondary	8.0	9.7
Universities and other higher education	8.5	9.3
	France	*Western Germany*
General secondary	23.2	23.9
Vocational secondary	12.3	44.5
Universities	4.2	2.9
	England and Wales	
Secondary	44.6	
Universities	1.5	
Other "further education"	52.0	

[a] Include students in correspondence courses. These account for one-third of total students in higher education and 15 per cent of students in vocational secondary schools.

Although the large differences in the share of young people in the population in the countries shown above tend to give an unduly favourable picture of the central Asian situation as compared with the other countries — in particular, France — it is nevertheless clear that there has been a tremendous evolution in

[51] On "Women's Day" in 1928 some 100,000 women repudiated the veil, most of the garments being publicly burnt, but so strong were domestic pressures that it was estimated that all but 5,000 relapsed. Even so, within relatively few years it had become the exception rather than the rule to see veils, and the practice is now largely abandoned save among the aged.

[52] Although fiercely suppressed in the inter-war years as confederates of "feudal reaction", the Moslem priesthood is now tolerated and is reconciled to monogamy and female education. The religious views and practices of the local nationalities may have been modified by the events of the last forty years, but in essence the local culture remains Mohammedan. The continuance of an attitude restricting women, married or unmarried, to the confines of the household seems—from reports of its practice among party officials—to be inspired more by national tradition than by religious precept.

the level and orientation of education in central Asia. The most important effects of this lie of course in the future. The schooling given lays the foundation for a rapid progress in productivity if the necessary amount of material investments can be supplied. At the same time it will reduce, and eventually eliminate, the necessity for the further immigration of specialists and skilled workers from other parts of the Soviet Union and on the other hand enable the indigenous population to participate more fully in economic management and public administration under the new decentralization schemes.

7. Conclusions

As was seen in the preceding sections, the rate of economic growth and of cultural change in the central Asian republics has been high during recent decades. However, it has also been pointed out that the degree of industrialization has increased somewhat less than in the Soviet Union as a whole and that the discrepancy between central Asia and the rest of the Soviet Union has thus widened. There is nothing surprising in this observation. It only serves to stress once more the inherent difficulty for under-developed regions or countries, especially during periods of rapid over-all expansion, even to attain a rate of growth high enough to improve their position relatively to the more developed regions or countries. In fact, the regional differences which exist in western Europe were largely created or widened precisely during the periods of rapid industrial growth in the nineteenth century. Seen in this perspective, it rather appears remarkable that the widening of the disparity between the central Asian region and the Soviet Union as a whole has been so moderate.

The discussion of agricultural problems and of living standards in central Asia has suggested two main conclusions. First, the difference within central Asia between rural and urban levels of income, though still considerable, seems to be distinctly smaller than that found elsewhere in the Soviet Union, so that in this respect central Asia seems to show a more balanced picture than the Soviet Union as a whole. Secondly, however, there appears to be a very wide spread of incomes within central Asian agriculture, and it has been suggested that there may be scope for a considerable redistribution of farm income, through further modifications of the system of cotton prices. It has been argued that, at the present stage, the system of premia for high cotton yields, rather than being an incentive for high productivity, has the effect of retaining an undesirably large amount of manpower on the more favoured collective farms.

It has also been seen that investment needs will continue to be very high in central Asia, both because the rate of growth of population remains high by Soviet standards and because there is need for a rapid rate of industrialization to make possible a reduction of the labour force in agriculture. This will be all the more necessary if, as has been suggested, some reduction in the specialization on cotton proves desirable.

These desiderata must weigh heavily in the long-term plans for the regional economic structure and for the economic relations between the central Asian republics and other parts of the Soviet Union. The recent establishment of regional economic councils cannot fail to give increased emphasis to problems specifically linked with the development of the various parts of the country, such as that of inter-regional capital transfers (viz., the geographic distribution of central budget grants on the one hand, and of transfer of turnover taxes and profits to the central budget on the other). It has been argued above that in future there will probably be need for a considerable net flow of capital to central Asia from the rest of the Soviet Union.

The present trend towards decentralization of planning may also draw attention to the need for closer co-operation among the various central Asian republics. As has already been mentioned, the division into republics at the end of the civil war was based on linguistic criteria and seldom coincides with economic needs.[53] However, some central ministries had been powerful enough to create unified administrations for particular industries.[54] It does not seem to be in the interests of efficiency that the Uzbek republic has been subdivided into four regions while the other three republics form further units by themselves inside their present frontiers. Proposals have, in fact, been made for all the central Asian republics (either including or excluding Kazakhstan) to form one economic unit;[55] and it thus seems that no final solution has

[53] The Fergana valley, for instance, became divided in the 'twenties among three republics, after having been united first under the Kokand Khan and subsequently under the Russian Czar. The Leninabad oblast, which occupies the mouth of the valley, has no economic links with Tadzhikistan, of which it has been made a part. There is a road, but neither direct rail nor air connexion between Stalinabad and Leninabad (the rail journey of 48 hours involves a 10- to 17-hour wait at an interchange station; the flight involves change of plane at Tashkent). The urban population of Leninabad (Khodzhkent) oblast in 1926 was overwhelmingly Tadzhik, but the rural population predominantly Uzbek. Even in the period of centralized administration the division of the valley caused difficulties. For instance, state farms run by the Uzbek government have difficulty in finding grazing for their sheep because those pastures which would naturally serve the purpose are situated in Kirgizia.

[54] E.g., there was a combined trust for the oil-fields of all three republics in the Fergana valley.

[55] See an article by P. M. Alampiev in *Planovoe Khozyaistvo*, No. 6, 1956, and critical comments by A. Danilov, *ibid.*, No. 2, 1957.

yet been found to the problem of the optimum size, for planning and administrative purposes, of economic regions in central Asia.

One other problem which may come to the fore as a result of the decentralization of planning, and which may well call for joint planning by the various central Asian republics, is that of developing trade relations with neighbouring foreign countries. This is closely related to the improvement of transport facilities and the consequent lessening of the region's isolation which, as mentioned at the beginning of this article, is one of the main economic difficulties with which it is faced. One major step in this direction is now being taken with the construction of the railway line from China through the Gobi desert to Alma-Ata — there to be linked with the central Asian network. Whereas the physical and climatic obstacles being overcome in the construction of this railway are enormous, the central Asian railway system could comparatively easily be linked to both the Persian Gulf and the Indian Ocean through Iran and through Afghanistan and Pakistan, respectively. Strategic considerations alone, from the time Czarist Russia faced British India across the Pamir, have made the frontier railways of the region run east-west and never north-south. Any future change in the political climate in western Asia which would allow such connections to be established could be of tremendous importance for the economy of the central Asian region.

It has been seen that in the economic development of Soviet central Asia two main periods, separated by the Second World War, can be fairly clearly distinguished. In the first period the improvement in the conditions of the Asian population was mostly limited to agriculture, partly because the main emphasis in the development policy in this period was on expansion and intensification of agricultural production and partly because the new industries which were set up in the region were manned overwhelmingly by the numerous immigrants from other parts of the Soviet Union. By contrast, in the second period, the growth of industry, although less rapid in percentage terms, became much more substantial in absolute terms and increasing numbers of Asians were recruited. At the same time larger numbers of young people of Asian origin enjoyed vocational training and higher education, so that a fairly large share of the Asian youth has by now acquired technical and scientific knowledge and practical experience in handling modern equipment.

Resources devoted to the improvement of education and training as well as health represent a long-term investment in the sense that their fruits, in terms of higher productivity, are reaped only with considerable delay. It may therefore be expected that the impressive achievements in these fields will contribute much to the increase of productivity over the next one or two decades. A higher level of education is not only a source of higher productivity within the given occupational pattern, but it is also apt to exert pressure for further change of that pattern, in the direction of industrialization and urbanization. It is important, in this respect, that cultural change has affected the rural, no less than the urban, population. A well-educated farm population cannot easily be content to continue with primitive agricultural methods, and the rise in rural educational levels will by itself be an incentive for those agricultural improvements which will free under-productive farmers for work in other sectors of the economy. The revolution in cultural patterns already carried out in central Asia therefore contributes to make the long-term economic prospects for the region favourable in spite of the difficulties which are bound to arise when the arrival of the large post-war generations on the labour market necessitates heavy outlays for directly productive investment.

Corrigenda to the " Economic Bulletin for Europe ", Vol. 9, No. 2

Page 4, Table 4 : France, authorizations, first quarter 1957: For " 5 " read " – 5 ".

Page 22, Table 13: Eastern Germany, Hard coal: 1957 1st half: For " 1.3 [a] " read " 1.4 [a] "; Caustic soda: 1956 1st half: For " 235 " read " 134 ", 1957 1st half: For " 261 " read " 138 ".

Page 24; first column, *Construction:* line 11: For " one-third " read " one-quarter "; line 14: For " fall " read " shortfall ".

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